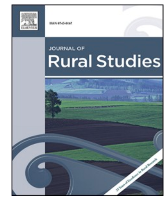
Journal of Rural Studies 86 (2021) 262–269

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud



Exploring state pension provision policy for the farming community

Michael T. Hayden [a,*], Bridget McNally [a], Anne Kinsella [b]

[a] School of Business, Maynooth University, Maynooth, Co. Kildare, Ireland
[b] Agricultural Economics and Farms Surveys Department, Teagasc, Mellows Campus, Athenry, Co. Galway, Ireland

ARTICLE INFO

Keywords:
Agriculture
Pensions policy
Retirement income
Generational renewal
Succession planning
Farm transfer

ABSTRACT

This paper explores Irish Government Pensions Reform proposals, from the perspective of the self-employed community and specifically the farming community. It investigates whether the proposed changes to the State Pension System set out in the Governments “Roadmap for Pensions reform 2018–2023” will, in the context of farmers and the stated objectives of the Department of Agriculture, Food and the Marine, keep pensioners above the poverty line and help ensure the survival of rural Ireland or whether, the family interdependencies which currently exist and the vulnerabilities that arise as a consequence, will remain largely unaddressed.

This paper illustrates the stark reality that under the current State Pension System, low-income farmers can fail to qualify either for the State Pension (Contributory) or the State Pension (Non-Contributory) leaving them faced with working long into their retirement years or financially dependent on family members in their old age, and that proposed changes to the State Welfare System do not alleviate this predicament. This has subsequent consequences for the sustainability of generational renewal in the agricultural industry and consequently could have far reaching societal impacts.

Conscious of the view that farmers should “pay their way” as far as state pensions are concerned, we recommend a model for achieving undisputed entitlement for all farmers to the Contributory State Pension, going forward.

1. Introduction

This paper explores the current State Pension System and the proposals for Pensions Reform, from the perspective of the self-employed community and specifically the farming community. It illustrates difficulties that can arise for “asset rich but cash poor" farmers and others in the self-employed community, on reaching retirement age. It investigates whether the proposed changes to the State Pension System as outlined in the Governments “Roadmap for Pensions Reform 2018–2023” (Government of Ireland, 2019) will, in the context of farmers and the stated objectives of the Department of Agriculture, Food and the Marine, keep pensioners above the poverty line and help ensure the survival of rural Ireland or if the family interdependencies which currently exist and the vulnerabilities that arise as a consequence, will remain largely unaddressed. It also suggests a possible remedy to alleviate the asymmetry that exists between succession planning and retirement income planning for the farming community.

Irish Revenue statistics on the farming community (Revenue, 2018) put the percentage of Irish farmers in 2016 over the age of 50 at approximately 45% with a further 20% where the age of the farmer was not disclosed. Average farm incomes for 2016 were €21,952 and across county ranged from €12,120 in Donegal to €35,026 in Waterford. In 2016, out of approximately 137,500 farmers operating in Ireland (CSO, 2018), only 264 farmers claimed retirement tax relief on transferring the family farm to another family member while a further 468 farmers claimed retirement relief on sale of the farm outside the family. IFAC (2019) report that 62% of farmers over 65 have no private pension, while 52% of farmers between 40 and 65 years old have no private pension plan or a plan in place for one spouse only. Given the low levels of average annual farm income, it is reasonable to assume that lack of affordability is one factor contributing to the low private pension coverage and that in the main, farmers will have to continue farming into their later years, liquidate farm assets or rely on the State Pension or a combination of all three if they are to have adequate income in their old age and in their own right.

There is a view by some that such difficulties as outlined above are

* Corresponding author.
E-mail addresses: michael.hayden@mu.ie, bridget.mcnally@mu.ie (M.T. Hayden), bridget.mcnally@mu.ie, michael.hayden@mu.ie (B. McNally), anne.kinsella@teagasc.ie (A. Kinsella).

https://doi.org/10.1016/j.jrurstud.2021.05.032
Received 16 July 2020; Received in revised form 5 March 2021; Accepted 26 May 2021
Available online 18 June 2021
0743-0167/© 2021 Elsevier Ltd. All rights reserved.

not really difficulties at all and could be resolved if the farmer were to sell part of the farm assets to fund retirement. However, such a view fails to consider the intricacies of family farm businesses and an attachment to land that previous family generations farmed (Conway et al., 2017). Succession planning is an integral part of the continuing life cycle of any family owned business but it plays a very important part in the farming physic and in Ireland represents a particular challenge, given the capital nature of the business, concerns over viability of the business and in many cases no clear successor or lack of interest among potential successors. Even where a clear and willing successor exists, there can be conflicting interests. If the retiring farmer transfers the entire farm to the younger generation, he/she may become vulnerable and dependent on the Social Welfare System and any non-farming assets, and perhaps ultimately dependent on family for income in retirement. If he/she retains some farm assets as a nest egg for retirement, he/she potentially qualifies for reduced social welfare pension (because of the imputed means calculation), denies the younger generation full control of the farm assets involved and may also be forced to depend on family financially to avoid selling farm assets.

One may ask why we should be concerned with the current circumstances and long-term sustainability of low-income farms. Davidova et al. (2013) state that small and semi-subsistence farms in the EU play several socio-economic roles. They maintain rural welfare, keep rural areas populated, contribute to the rural non-farm economy, and provide environmental public goods such as attractive landscapes. Furthermore, they assert that the disappearance of small farms often means increased poverty, losses to the rural non-farm economy, and depopulation, especially in remote areas, and might result in environmental loss. They argue that farms produce a range of public goods for which, compensation is justified, and the case for support on welfare grounds is strong. In this context we argue that pension policy has a role to play in addressing some challenges facing the agricultural industry.

The history of the development of Pay Related Social Insurance (PRSI) for the self-employed and its application in practice means that low-income farmers retiring under the current regime are very likely to fall short of the contributions necessary to qualify for the full State Pension (Contributory) (SPC) unless they have also worked consistently outside the farm. Spouses and partners who have worked on the farm may also be similarly affected. This leaves farmers and their spouses looking to the State Pension (Non-Contributory) (SPNC) System for financial support in retirement, however, because of the means testing rules for assessing entitlement to the SPNC, low-income farmers with even a small holding of land can fail to qualify either for the SPC or SPNC leaving them faced with working long into their retirement years or dependent on family members in their old age. This has subsequent consequences for the sustainability of generational renewal in the agricultural industry and consequently could have far reaching societal impacts.

The remainder of this paper is structured as follows; Section 2 sets out the study context, in terms of both the Agricultural Industry and the Irish Pensions system. Section 3 discusses salient literature on the cultural and economic factors which feed into this debate. Section 4 sets out our methodological approach. Section 5 contextualises our findings within the relevant Government and EU policy objectives of sustaining rural communities and income adequacy and security in old age. Section 6 sets out our concluding thoughts.

2. Study context

2.1. The Irish agricultural industry

After the downturn in the Irish Economy post 2008, the government primed traditional indigenous industries to stimulate economic growth. Ambitious goals were set out for the agricultural industry in its Food Harvest 2020, and subsequently in its Foodwise 2025, (strategy documents of the Department of Agriculture, Food and the Marine) which reflect the importance of this industry to the future of the Irish economy. The aim of these strategy documents is to set out practical ways in which targets for sustainable growth can be achieved for the industry.

The 2016 Farm Structures Survey reveals that there are approximately 137,500 farms in Ireland (CS0, 2018). The National Farm Survey (NFS[1]) is conducted in Ireland annually, and is a representative sample covering circa 90,000 of these farms nationally. Many Irish farms have a standard output of less that €8000 and are considered “Small Farms” and these farms are excluded from the NFS (Donnellan et al., 2020). In the NFS farms are analysed by farm system; the main farming systems in Ireland are dairy, cattle rearing, cattle other, sheep and tillage. The average family farm income (FFI[2]) in Ireland in 2019 was €23,578. However, FFI varied significantly across different farm types: dairy €66, 828, cattle rearing, €9,008, cattle other €13,761, sheep €14,780 and tillage €32,700. Farming in Ireland continues to be reliant on subsidies, which, on average, accounted for 78% of FFI in 2019, with cattle and sheep systems most reliant and dairy least reliant on such subsidies. Furthermore, off-farm employment is an important source of income for many farm households. In 2019, 52% of farm households had off-farm income, whilst the percentage of spouses employed off-farm was 34%. The NFS classifies farms as being economically viable, sustainable or vulnerable. In the 2019 NFS, it was highlighted that 34% of Irish farms were deemed viable, 33% sustainable and 33% vulnerable (Donnellan et al., 2020).

Looking more specifically at Small Farms, (Dillon et al., 2016), in its detailed review of the data collected for the 2015 NFS data, highlights that the average FFI on Small Farms was €2,917, while approximately three quarters had FFI of less than €5000. Furthermore, such Small Farms are very dependent on subsidies as, depending on farm type, direct payments ranged from 173% to 219% of income on Small Farms in 2015, resulting in 50% being classified as economically vulnerable. The study also reveals that, in 2015, 32% of Small Farms were operated by farmers aged 65 years or older compared to 25% of larger farms. Interestingly, despite the low levels of profitability and economic vulnerability 85% of Small Farm operators planned to continue farming.

In the context of this current study, the above profiling of farm enterprises in Ireland, especially small farms, highlight some major challenges for the industry. Primarily, this challenge presents as a generational renewal issue. The agricultural industry needs to develop sustainable and profitable farm enterprises which are attractive for younger farmers to takeover/manage, while at the same time create the circumstances which allow older farmers to retire with adequate income for retirement. Adequate retirement income is critical if older farmers are to retire and afford younger farmers the opportunity to takeover farms. Otherwise, farmers will have to continue farming into their later years or liquidate farm assets if they are to have adequate income in their old age and in their own right.

2.2. Overview of pension system for the self-employed

Under the State Pension System, a person who has reached state pension age (currently 66) may qualify for a State Pension (Contributory) (SPC) and/or a State Pension (Non-Contributory) (SPNC) payment. Widows, widower's or surviving Civil Partner's and adult dependents of a SPC pensioner may also qualify for pension payments.

The SPC is not means tested and entitlement levels are based on PRSI contributions. Prior to March 2018, entitlement was based on a “yearly average” approach. Under this approach, the total number of

[1] The data gathered for the NFS annually is guided by the Farm accountancy data network (FADN) standard output (SO) methodology of the EU commission which is applied to EU national surveys.

[2] FFI is calculated by deducting all farm costs (direct and overhead) from the value of gross farm output. Factors of production owned by the farmer, such as family labour and land, are not included as costs of production.

contributions paid/credited at pension age is divided by the number of years between entering insurable employment and the last full year before pension age is reached. If the yearly average is 48 or more the pensioner is entitled to full rate pension. Reduced rates are payable for lower averages albeit not on a pro-rata basis. This system results in differences in pension payments to people which are not justified by reference to their contribution history. For example, a person can qualify for a full pension based on a small number of years payments (as little as 10 full contribution years), providing there are no gaps in their PRSI record whereas a person with more than 10 years contributions but with a significant gap in their record, might be paid a reduced rate. One of the major reforms announced in the Roadmap for Pensions Reform 2018–2023 was the replacement of the "yearly average" approach with the "total contributions approach" (TCA). Under the TCA, the level of SPC a person is entitled to is directly proportionate to the number of social insurance contributions made by him/her over his/her working life, with pension credits granted to persons who had taken time out of the workplace to perform caring duties. A full SPC is available to all persons with a full record of 40 years of social insurance contributions with pro-rata entitlements for persons with less than 40 years of contributions. People who have taken time out of the workforce to take up caring duties are eligible to accumulate up to 20 years credits towards meeting the full 40 year requirement, providing they have at least five years of credits accumulated before they take up their caring duties. The TCA approach is intended to provide a more logical and transparent system, where the pension paid to an individual will more accurately reflect the number of contributions paid. With effect from March 2018, pensioners who have retired since 2012 may choose to have their pension calculated, based on either the yearly average approach or the TCA, whichever is more beneficial for them. It was intended that the TCA would replace the "yearly average" rule with effect from Q.3 2020, however legislation is still awaited to give effect to this change.

The SPNC is means tested. The calculation of an individual's means can be a complicated calculation and may differ between assets. Typically for any given year, it incorporates calculating the cash income of the individual as well as imputed income from the individual's property and investments. Cash income includes, employment income, self-employed income, income from social welfare, maintenance payments etc. The calculation of cash income for the current year is based on the previous year's cash income. Where an individual has property including land, savings and investments, the capital value of all such property is aggregated and income is imputed based on a standard formula. The only exception to this is the individual's home which is exempt from the calculation. Currently, an individual with weekly assessed means of €30 or less qualifies for the full SPNC of approximately €240. Individuals with weekly assessed means of between €30 and €262 qualify for a reduced pension. Individuals with weekly assessed means over €262 do not qualify for any SPNC. The standard formula for assessing the value of capital is outlined in Table 1.

In the case of a couple living together (married, civil partners or cohabiting) the means of each member of the couple is taken to be half of the total means of the couple. The assessment basis means that asset rich, but cash poor claimants and their spouses/partners are vulnerable to having income imputed to them which puts them above the threshold for entitlement to the SPNC.

The Roadmap for Pensions Reform 2018–2023 contained another fundamental reform measure relating to the implementation of an 'Automatic Enrolment' supplementary retirement savings system from 2022 for employees without existing private pensions coverage. This "Auto Enrolment" initiative was in recognition of the low rate of private pension coverage generally in the population (circa 50%). The objective was that this supplementary pension together with the State Pension would guard against a serious reduction in income and living standards for pensioners post retirement. There are no plans in the Roadmap for an extension of the Auto Enrolment provisions to the self-employed including farmers.

Table 1
Imputed income from capital value of assets for SPNC.

Capital	Weekly means assessed
First €20,000	Nil
Next €10,000	€1 per €1,000
Next €10,000	€2 per €1,000
Balance	€4 per €1,000

3. Literature review

There is body of literature relating to succession planning in agriculture, however the literature on the specific issue of retirement provision and pensions in agriculture is scant. According to Gasson and Errington (1993) intergenerational farm transfer is a multifaceted process that encompasses three distinct but interrelated processes, succession, inheritance and retirement. However, as Conway et al. (2017) highlights, the issue of farm transfers and retirement is quite a complex process that requires policymakers and practitioners to avoid the often implicit assumption that mere economic factors are most important. Quite often family dynamics and socio–economic factors are equally, if not more, important (Stephens, 2012).

3.1. Level of private pension coverage in Irish agriculture

Historically, the pension policy of most Irish farmers was to hold onto their land with the expectation that relatives (or neighbours) who hoped to inherit their land would care for them in their old age. This resulted in very low levels of private pension coverage by farmers. However, in recent decades this expectation by farmers has changed for several reasons. Firstly, it is not always easy to attract a farm successor, where before there was often sibling rivalry for the land. Secondly, there is a growing emphasis by the industry on the need for financial planning well in advance of retirement in order to minimise significant tax liabilities that may arise on the transfer of farm assets. Despite this change, the level of private pension coverage by Irish farmers is still relatively low. 62% of Irish farmers over 65 have no private pension, while 52% of Irish farmers between 40 and 65 years old have no private pension plan or one for one spouse only (IFAC, 2019). These coverage statistics are less than the coverage levels for self-employed generally. Approximately half (50.7%) of self-employed persons had pension coverage in Quarter 3 2018 (CSO, 2019). This comparatively low level of cover is a serious concern for the agricultural industry as 76% of Irish farmers are aged 55 or over (CSO, 2018).

3.2. Possible causes of low private pension coverage by farmers

There are several factors that contribute to the low level of private pension coverage generally in Ireland. These include affordability, perceived poor value for money of private pension products, lack of knowledge/education, low levels of trust in pension providers and no perceived or actual value from the taxation incentives because of low-income levels. Add to this mix, the impact of specific elements of agricultural policy and the uniqueness of the cultural identity of farmers and it's easy to understand why coverage levels for farmers' lags behind that of the self-employed population generally.

3.2.1. Agricultural policy

According to Leonard et al. (2017a) agricultural policy often results in situations where it is more economically beneficial for farmers to farm until death rather than transferring land before death. Their study highlights how farmers often depend on farm payments (subsidies) for income into their retirement years. The promise of a steady income past retirement age can often encourage farmers to retain farm ownership as this is a condition for receipt of such subsidies. Farmers therefore may

view the receipt of farm payments as a substitute for retirement income from a private pension. Riley (2016) however takes a different perspective and highlights lack or retirement income as a reason why farmers are often highly averse to retirement.

Current agricultural policy allows farmers to receive support payments while also receiving any state pension entitlement they may have. Leonard et al. (2017a) argues that the creation of a policy that does not allow farmers to retain farm payments when they acquire a state pension may increase the incidence of land transfer. However, this would further compound the issue of retirement income for farmers. Norton (2004) cautions against policy reforms that only address one issue at a time, as opposed to creating a holistic directional strategy for the sector.

3.2.2. Cultural identity of farmers

There is a body of literature that discusses the goals/values/beliefs of farmers, much of which revolves around the concept of *farmer identity* (Gasson, 1973; Austin et al., 1996; Willock et al., 1999; Beedell and Rehman, 2000; McGregor et al., 2001). This literature alludes to how “farming is a way of life, a vocation”. In the context of this study, this aspect of farmer identity may explain how in contrast to most individuals, farmers often do not intend to retire or scale down working. Perhaps it is part of their identity. Conway et al. (2018) reveal that there is a significant cohort of farmers that do not plan to retire in the future. Based on a survey they conducted, 28% state they never intend to retire, only 27% of farmers acknowledge that they intend to fully retire, and 45% plan to semi-retire. In addition, Downey et al. (2017) emphasise that retirement involves a reconfiguration of place and identity and this represents significant challenges for farmers' retirement considerations. If most farmers do not plan to fully retire then perhaps, they do not see it necessity to make private pension contributions.

Similarly, in the family firm literature, the term “socioemotional wealth” (SEW) is discussed when documenting the goals of family firms. Gomez-Mejia et al. (2007, p.106) define SEW as ‘the non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence and the perpetuation of the family dynasty’. This suggests, family firms are not only concerned with financial returns, but also with SEW. Given most farms in Ireland are family farms, this aspect of SEW appears quite apt when discussing succession planning and retirement provision. Issues such as identity and succession, described in the SEW literature also appear in the farmer decision-making literature. Öhlmér et al. (1998), O'Donnell et al. (2011) and Hansen and Greve (2014) all identify succession planning as an influence in farmer decision-making, while Gomez-Mejia et al. (2007) refers to it as an influence in the context of socio-emotional wealth. This strong influence of succession planning is deeply embedded in the cultural identity of farming, Peirano-Vejo and Stablein summarise this identify aspect of farmers by declaring; ‘farmers have a special bonding with the place where they work (and live) – often given to them by previous generations. They are expected to pass it on as a legacy to their children (2009, p.446)’. Conway et al. (2016) reveal that the potential loss of personal identity and self-esteem brought about by transferring the farm and retiring can have a delaying effect on the transfer of farms. Thus, if there is a cultural identity to farming of not intending to retire, farmers may not see the need for an orthodox private pension arrangement.

Linked to this issue of farmer identity, farmers tend to reinvest profits they earn back into the farm. Hayden (2017) explored the influencing factors on the financial decision-making process of farmers and highlights that farmers tend to ‘stick to what they know’ i.e. reinvest on farm as opposed to investing money off-farm. This tendency to reinvest profits on-farm further reduces the availability of money to contribute to a private pension.

3.2.3. Low income levels

Many farm enterprises are economically vulnerable. As highlighted in Section 2.1, the 2018 NFS identifies the average FFI as €23,333; this compares very poorly to average industrial wage in Ireland of €38,871 in 2018 (CSO, 2019). Farmers accordingly may have neither the means nor the appetite for retirement because of income constraints. Furthermore, the income of farmers is volatile; some years they make good money, other years they do not, with many uncontrollable factors such as weather and market prices impacting profitability (Hayden, 2017). When farmers do make a profit, they often want to plough the money back into the farm, rather than invest in a pension fund.

Farm type may have a significant impact on the level of pension coverage for farmers. There is a significant variance in the level of profitability of respective farm types. The average profit for dairy enterprises for 2019 was €66,570, while for cattle rearing enterprises was only €9,188 (Donnellan et al., 2020). These figures highlight how cattle farmers may not have the income to afford private pension contributions while their dairy counterparts may well be able to afford such contributions. However, when Leonard et al. (2017b) investigated the potential of farm partnership to facilitate farm succession, they noted that the income replacement level of a pension may be an issue in the case of a dairy farmer given the higher level of income they would have received prior to transferring the farm.

3.2.4. Taxation issues

Linked to the issue of low incomes, farmers traditionally do not pay high levels of tax due to their low levels of income. One of the main incentives/advantages of paying into a private pension is that pension contributions are tax deductible. However, if farmers' tax liabilities are quite low, then the tax advantage of contributing to a private pension scheme may not be an incentive to contribute. Indeed, Mulligan et al. (2019), in wide ranging research on the perspectives of Irish Citizens generally on the Irish pension system, found that only a minority were knowledgeable about and understood how the tax system and pensions system interacted. The majority were not aware that they could receive favourable tax treatment on pension contributions and when informed of the availability of tax relief, some indicated that tax subsidised retirement savings made little difference as they did not have the capacity to either save or increase their savings for retirement.

3.3. Impact of low private pension coverage on the industry

It is widely recognised in the literature that succession planning and generational renewal is a huge challenge for the industry, not only in an Irish context, but internationally. Income provision in retirement is an integral element of succession planning and therefore, the low level of private pension coverage could have a significant impact on the future of this important industry.

If farmers fail to provide for non-farm income in retirement, there is a knock-on impact on the transfer of farms to the next generation. Duesberg et al. (2017) explored the land transfer choices for farmers without an identified successor. They conclude that non-succession and an increase in low intensity retirement farming could become more widespread in the future and is particularly concerning with growing world populations impacting the security of a sustainable food supply (Brown, 2009).

In Ireland, the 2016 Farm Structures Survey (CSO, 2018) reports only 7% of Irish farmers are under 35 while 76% are aged 55 or over. These statistics reveal a major generational renewal challenge for the industry and suggest that non-farm related retirement income provision is a critical factor in facilitating farm transfers whilst protecting retired farmers from poverty. Policies must be developed and implemented which have a dual emphasis; such policies need to encourage older farmers to retire and entice younger farmers to enter the industry. Leonard et al. (2017a) maintain that an obvious incentivising factor for farm transfer concerns the need for the retiring farmer to have sufficient income in the form of a pension or other resources. However, as Lobley et al. (2010) point out, while some farmers fully retire by selling/moving away from the farm and no longer rely on a farm to produce retirement

income, the majority of farmers enter semi-retirement and rely on the farm to produce retirement income.

Pietola et al. (2003) analysed the impact of the level of Finnish farmers' individual pension benefits on the timing of their exit decisions from farming. In that study they emphasise that pension levels influence the decision to keep farming past retirement age and that higher retirement benefits increase the probability of farmers' exit. The level of pension benefits is also important when the farm is transferred to a new entrant (for example, the farmer's own child), because most farms are too small to sustain two families.

An associated impact of low private pension coverage is the potential impact on the continued survival of farming enterprises from a socio-economic perspective. If farmers are not provided with adequate income provision to enable retirement, then the survival of many farm enterprises may become uncertain. If older farmers continue to farm small holdings until death the opportunity to pass those farms onto the next generation may be lost. Davidova et al. (2013) state that small and semi-subsistence farms in the EU play several socio-economic roles.

A consequence of farmers not having adequate retirement income is reduced land mobility. Bogue (2013) claims that the lack of land mobility in Ireland is having a negative effect on agricultural growth. While, Kirkpatrick (2016) highlights the lack of land mobility as a significant challenge for young people aspiring to embark on a career in farming. Traditionally in Ireland young people's entry to farming is quite inflexible and is dominated by inheritance or purchase of land, whereas in other countries entry via land leasing and farm partnerships is more common (Hennessey and Rehman, 2007). These issues present significant socio-economic challenges; on a micro level for the development of family farms and rural communities, and on a macro level for production efficiency and economic growth of the agricultural industry to help address the concern about the sustainability of food systems around the world (Gutter and Saleem, 2005; Pretty et al., 2005). Perhaps effective retirement income and pension policies formulation could help alleviate this problem.

As noted in the preceding paragraph it is important for the industry to develop sustainable farm enterprises to meet the societal need of a sustainable food supply. Lobley (2010) highlighted that if the new generation of farmer is seeking to improve productivity or business viability through investment, while simultaneously the older generation farmer may be engaged in disinvestment to provide for their retirement, this presents as a major challenge. This is particularly likely where no separate pension provision has been made for the retiring farmer. These intricate features of this unique but important industry, further adds to the argument for income provision for retiring farmers via adequate pension provision.

3.4. Policies enacted to address the challenges of the industry

The Early Farm Retirement Scheme (EFRS) was one measure introduced to encourage older farmers to retire and to attract younger farmers into the Industry. In Ireland there have been three rounds to the EFRS scheme, in 1993, 2000 and 2007 but it ceased in 2009. These schemes enabled farmers to retire early (from age 55) and provided them with a pension (up to €15,000 a year for a maximum of 10 years) provided they retired from farming completely by transferring, selling or leasing their farm to a young trained farmer. The success of such schemes is questionable according to Davis et al. (2009).

A generous array of tax allowances is in place to support both the annual take home incomes of farmers and the transfer of family farms. These include exemption from tax on certain income from leasing of farmland, tax allowances for capital expenditure on farm buildings and other works and on milk quota purchases, relief for increase in carbon tax on farm diesel and stock relief. Generous reliefs also exist from capital transfer taxes for both the transferor and transferee on the retirement of a farmer and the transfer of his/her farm to a family farming successor.

3.5. Synthesis of the prior literature

The literature documents the low level of private pension coverage in Ireland and explores possible causes for this situation. It also outlines the significant challenges and potential negative consequences that this low level of private pension coverage has for the future of this important industry. Despite policies enacted to address these challenges their impact does not appear to have resulted in any significant structural reform to the overall agricultural landscape in terms of income provision for farmers in retirement. In this context, we explore if the recent and proposed changes to the State Pension System will help in keeping farmers in retirement above the poverty line and ensure the survival of rural Ireland or whether, the family interdependencies which currently exist and the vulnerabilities that arise as a consequence will remain largely unaddressed. A recent OECD report on taxation in agriculture (OECD, 2020) conducts a detailed overview of taxation issues (including pensions) affecting 35 OECD countries. It calls for further research in this area due to the scant literature available. This paper helps to somewhat redress this deficit and suggests a possible remedy to alleviate the asymmetry that exists between succession planning and retirement income planning for the farming community.

4. Methodological approach

Preparatory work for this paper involved discussions with pension experts/researchers, self-employed farming advisors and farm management specialists. It was evident from this initial investigation that the subject was an emotive one and this made it difficult for reasoned objective opinion to prevail. The farming community is regarded as one of the most powerful and successful lobby groups in Ireland and indeed in the EU and this makes it difficult for the non-farming community to accept that hardship can be experienced by certain sections of the farming community without being over stated. There was little sympathy for the asset rich cash poor conundrum of low income farmers and no general acceptance that the sustainability of rural Ireland and adequate income for retiring farmers in old age are interdependent.

Based on these initial discussions, we formed the view that a survey or interview approach to our research would yield views and opinions largely based on self-interest and preconceptions. Accordingly, this paper adopts a theoretical desk-based approach. We design hypothetical case farms around farmers with no private pension and consider their entitlement to either or both the State Contributory and Non-Contributory old age pension. Hypothetical cases are a common methodological approach adopted in agricultural research to explore the effect of policy developments on farmers (Le Gal et al., 2011; O'Donoghue, 2014; Geoghegan et al., 2017: Leonard et al. 2017a; Utomo et al., 2018; Birge and Herzon, 2019). There are a number of benefits to this methodological approach. Leonard et al. (2017a) emphasise how the use of hypothetical cases is a suitable approach to adopt in agricultural research as it allows for the sensitivity of farms to policies to be tested while avoiding the complications that could arise were the study undertaken on a real farm. Le Gal et al. (2001) outline that hypothetical cases are useful to illustrate the operation of models and/or policy changes on farms and they allow researchers to draw generic conclusions about the policy issues explored. Furthermore, the use of hypothetical case farms provides the opportunity for studies to focus on scenarios under certain predefined assumptions (O'Donoghue, 2014). For these reasons we deem the creation of hypothetical case farms the best methodological approach to adopt in this study. The specific hypothetical case farms considered are outlined in Table 2.

The hypothetical case farms are developed using a number of assumptions;

(1) Case farms comprise of a mix of both full-time and part-time farmers to reflect the reality of the employment status of

Table 2
Hypothetical case farms explored.

Case	Case Farmer	Marital Status	Spouse Working Off-farm	Social Welfare Contributions	Private Pension	Farm Value
1	Full-time[3] Farmer	Married	No	Full	No	€675,000
2	Full-time Farmer	Married	No	Intermittent	No	€675,000
3	Full-time Farmer	Married	No	None	No	€675,000
4	Part-time Farmer	Married	No	Full	No	€675,000
5	Part-time Farmer	Married	No	Intermittent	No	€675,000
6	Spouse of Deceased Full-time Farmer	Widow/Widower	No	Full by Deceased Farmer	No	€675,000
7	Spouse of Deceased Full-time Farmer	Widow/Widower	No	None by Deceased Farmer	No	€675,000
8	Full-time Farmer	Single	Not applicable	Full	No	€675,000
9	Full-time Farmer	Single	Not applicable	Intermittent	No	€675,000
10	Full-time Farmer	Singe	Not applicable	None	No	€675,000
11	Part-time Farmer	Single	Not applicable	Full	No	€675,000
12	Part-time Farmer	Single	Not applicable	Intermittent	No	€675,000

[3] Full-time farmer refers to a farmer with no off-farm employment while a part-time farmer refers to a farmer with some off-farm employment.

farmers in Ireland. The 2019 NFS reports that 34% of Irish farmers are employed off-farm (Donnellan et al., 2020).

(2) Case farmers are modelled using a mix of marital status situations including, single, married and widow/widower's to mirror the make-up of various farm household arrangements. Where a farmer is married or widowed we include the assumption that the spouse does not work off-farm. The reason we have applied this assumption is that many spouses of farmers work full-time on-farm and we wish to specifically explore how pension policy affects spouses in this situation.[3]

(3) We include scenarios to explore how the level of social welfare contributions (classified as full, intermittent or none) of the farmer affect the farmer or his/her spouse's entitlement to the State Contributory or Non-Contributory Pension under current legislation. To fulfil the aim of this study, we assume that each case farmer has no private pension in place.

(4) As the non-contributory state pension is means tested, a farm value for the case farms is included. A farm value of €675,000[4] is chosen in all cases and is calculated based on average agricultural land values in 2018 (Sherry Fitzgerald, 2018) and the average size of a farm in Ireland according to the 2010 Farm Structures survey (a survey conducted by the Irish Central Statistics Office every 10 years) of 32.7 ha (CSO, 2012).

5. Findings and discussion

A summary of the main findings is set out in Table 3 below. When we examine the hypothetical case farms developed in Section 4, we find that farmers who do not have sufficient PRSI contributions to qualify for the SPC, are unlikely to qualify for the SPNC either unless they divest themselves of all but a few acres of land. Based on the imputed income from capital assets for SPNC means testing purposes (see Table 1, Section 2.2), the income imputed to a farm holding of €675,000 for SPNC means testing would be €2,570[5] weekly or €133,640 annually, far in excess of the average reported earnings of the farming community reported in Section 1 and far in excess of the qualifying threshold for SPNC entitlement. In fact for a single farmer to qualify for full SPNC, he/she could not have capital assets exceeding €50,000 and capital assets of between €50,000 and €100,000 would entitle him/her to a reduced pension only. Capital assets over €100,000 would result in no entitlement. For the hypothetical cases of married farmers or farmers with civil or cohabiting partners, each partner would be deemed for means testing to have assets equivalent to half the family farm of €675,000 or €337,500. This imputes an income weekly to each partner of €1,220, again well above the qualification threshold for the means tested pension. The threshold for entitlement to full SPNC is €100,000 for a couple (€50,000 each) and a combined value of over €200,000 would reduce any entitlement to zero. This results in a situation where low-income farmers, and if applicable their spouses/partners, who on retirement wish to transfer the family business to a designated successor, are financially vulnerable. They cannot retain anything other than a few acres of land, if they are to have any entitlement to the SPNC. The perfectly understandable wish to retain some "nest-egg" however small is problematical. This leaves them potentially unprovided for, in the event that they have, over time financial needs over and above the SPNC.

A key driver behind the findings is the age at which the farmer begins to pay self-employed PRSI. Notwithstanding that a farmer's designated successor (for example, a child) may begin working/helping out on the family farm on leaving school or college, and could have sufficient contributions to be entitled to a full contributory pension on retirement, PRSI legislation prohibits that successor from being eligible to make such contributions until he/she either succeeds to the farm in full or becomes a full business partner, effectively therefore, not until the retiring farmer signs over part or all of the farm. If the "yearly average approach" is replaced by the "TCA", 40 years of full PRSI contributions will be required to qualify for a full SPC. In essence, unless the transfer is made before the successor reaches early thirties, it will not be possible to make sufficient contributions based on farming income only.

A third factor behind the findings is the PRSI contribution status of the farmer's spouse, civil partner or co-habiting partner who works full-time on the farm. Similar to the successor scenario described above, unless the spouse/partner legally owns the land or is a recognised business partner in the farm with designated levels of authority and control over farm affairs, the spouse/partner is not eligible to make self-employed PRSI contributions and unable accordingly to provide for a full contributory state pension. If an individual takes time out of the workplace for caring responsibilities, (for example, to raise a family), the TCA will give credit for up to 20 years contributions in respect of home caring responsibilities but only if the individual has a requisite number of paid contributions prior to taking up full-time caring responsibilities. This is a significant improvement on the "yearly average approach" but individuals who do not have the requisite contributions prior to taking up the caring responsibilities will be disadvantaged.

A final factor which feeds into the findings in Table 3 is the threshold at which self-employed contributions are made. In years where farmers make losses or have net income which is less than the PRSI threshold, farmers are not required to make PRSI contributions. However, this seeming relief creates a gap in the contribution history and farmers with

[3] If a spouse of a farmer works off-farm then their off-farm income may entitle thar spouse to a SPC, but this is not connected to the circumstances of the farm, and therefore we deem it appropriate to not explore this scenario in the hypothetical cases.

[4] €675,000 is a rounded approximate value of the average sized farm in Ireland of 80 acres (32.7 ha) based on the average land value per acre of €8,415 (€10,950 per acre for good quality land and €6,250 for poorer quality land).

[5] Imputed income calculation: First €20,000 exempt; next €10,000 at €1 per €1,000 = €10; next €10,000 at €2 per €1,000 = €20; balance of €635,000 at €4 per €1,000 = €2,540; Total imputed income = €2,570.

Table 3
Summary of Main Findings for 12 Hypothetical Case Farms listed in Table 2.

Case	SPC Entitlement for Farmer	SPNC Entitlement for Farmer	SPNC Entitlement for Farmer's Spouse	Continued Dependency Financially on Farm Income and/or Family	Impact of SPC Reforms	Impact of SPNC Reforms
1	Yes	Not applicable	No based on means test	No	TCA may grant home caring credits - 40 years contribution required for full pension	None
2	Partial	No based on means test	No based on means test	Yes	Same as Case 1	None
3	No	No based on means test	No based on means test	Yes	Not applicable	None
4	Yes	Not applicable	No based on means test	No	Same as Case 1	None
5	Partial	No based on means test	No based on means test	Yes	Same as Case 1	None
6	Yes (widow/ widowers)	Not applicable	Not applicable	No	Same as Case 1	None
7	No	Not applicable	No based on means test	Yes	Not applicable	None
8	Yes	Not applicable	Not applicable	No	Same as Case 1	None
9	Partial	No based on means test	Not applicable	Yes	Same as Case 1	None
10	No	No based on means test	Not applicable	Yes	Not applicable	None
11	Yes	Not applicable	Not applicable	No	Same as Case 1	None
12	Partial	No based on means test	Not applicable	Yes	Same as Case 1	None

income levels consistently below the threshold may not meet the required number of contributions to be entitled to a full contributory pension. It is worth noting that in this scenario, farmers could make voluntary contributions to keep up their contribution history, but this assumes farmers are aware of this option and have the financial means to make the contribution.

Irish farmers who depend fully on income from farming, may not have sufficient contributions to qualify for a full SPC, notwithstanding that they may have worked on the farm all of their working life. This may be due to a variety of factors: not succeeding to the farm until later in life and as a consequence not being liable to pay PRSI until assuming control of the farm, not being liable to pay PRSI in years of low income and losses and not making voluntary contributions where allowable, to avoid gaps in their contribution history. Reflecting on the findings from Table 3, it is also the case that farmers who retain even relatively small family farm holdings are unlikely to qualify for the SPNC, based on the means testing provisions and current land values. Spouses, civil and co-habiting partners are regarded as owning/being beneficially entitled to half of the farm, which effectively disqualifies them from the means tested pension, regardless of whether, in reality they have free access to liquidate half of the farm. All of this gives rise to uncertainty and vulnerability for both retiring farmers, their dependants and their successors, and is not conducive to sustainable generational renewal in the agricultural industry.

Objectively, a compulsory PRSI contribution system which gives all farmers and farm successors realistic access to the SPC would be a positive development for the farming community in particular and society in general. It would require a number of changes to the current and proposed new contribution system; specifically, mandatory PRSI contributions for farm successors and spouses/partners working on farms and not currently within the PRSI system, with a flat rate amount for those with income below a specified limit. Farmers below the income would also have a flat rate mandatory payment rather than the current voluntary option. Spouses and partners working on the farm would also be obligated to pay the flat rate PRSI to maintain their contribution history in years where otherwise gaps would be created.

The security of the promise of a full contributory pension for both the farmer and his/her spouse/partner would undoubtedly relax the web of anxiety around retiring, dependence on family for income into the future, and when the right time is to transfer the farm to the next generation. It should help in preserving the culture of the family farm (by keeping them intact), discussed earlier as an important fabric of Irish rural society. Importantly, by ensuring a specified level of income for retired farmers (post transfer), it reduces their financial vulnerability in difficult family situations. For the non-farming society, a contribution system spanning a farmer's entire working life, leading to a contributory pension on retirement would reflect a sense of fairness and farmers paying their way which also would be welcome.

6. Conclusion

The most recent reforms of the State Pension System have and will have little impact for the self-employed community in general and the farming community in particular. It does little to alleviate the asymmetry that exists between succession planning, retirement income planning, income security in old age and generational renewal. Based on the findings in this study, many Irish farmers will find themselves in a situation at retirement, where they fail to qualify for the full SPC or the SPNC and will be dependent financially on the farm (and/or family members) for retirement income. This issue has the potential to threaten the sustainability of farming in Ireland and further compounds the problems surrounding generational renewal in the agricultural industry, which could have far reaching negative societal impacts. Objectively there needs to be a framework whereby farmers by paying their way can rely on the security of the SPC so that decisions regarding farm transfers to the younger generation can be less financially pressurised and less driven by fear of income vulnerability in old age.

There are some limitations to the research approach adopted. We acknowledge that the circumstances of each farm/farmer can be quite unique in terms of marital status, income levels, farm size and succession planning and the methodological approach adopted in this study fails to capture all scenarios. However, this aim of this paper is not to look at all possible scenarios, but rather through a number of hypothetical cases, reflective of real life situations, to demonstrate that the current system of PSRI for the self–employed and the means testing rules for entitlement to a Non-Contributory Pension, results in many farmers being unlikely to qualify for a full State Pension, contributory or otherwise. In this study we have explored the scenarios by adopting quite modest farm sizes, and hence quite a modest level of asset values for the purposes of means testing. In reality, because of the means testing of capital provisions, even retaining ownership of a few acres of land (as a safety net) could significantly hamper a retiring farmers entitlement to the SPNC. This study is focussed on average farm income farms and there is a presumption that private pension provision is neither financially affordable

or tax advantageous for the hypothetical case farms in the study given that the farmers in question would not pay tax at the higher rate and many would not have sufficient taxable income to absorb the tax benefit of pension contributions. In this context we note that future studies in this under researched area are called for. For example, future studies could explore a wider array of case scenarios and/or look at the affordability of private pension coverage of farmers in various farm systems (for example, dairy, cattle or tillage) and thereby add further insights to the literature in this area.

Given the dearth of literature in this area our hope is that this paper will ignite a conversation around the area of pension provision for the farming community. We also hope that this paper will contribute to the wider debate on pension provision for the self-employed. Conscious of the view that farmers should "pay their way" as far as state pensions are concerned, we recommend a model for achieving undisputed entitlement for all farmers to the Contributory State Pension, going forward. Of course, the adequacy of the Contributory State Pension is another matter for debate, but that as they say is for another day!

Author statement

We hereby certify that all authors have seen and approved the final version of the manuscript being submitted. They warrant that the article is the authors' original work, hasn't received prior publication and isn't under consideration for publication elsewhere.

References

Austin, E.J., Deary, I.J., Gibson, G.J., McGregor, M.J., Dent, J.B., 1996. Attitudes and values of Scottish farmers: "Yeoman" and "Entrepreneur" as factors, not distinct Types. Rural Sociol. 61 (3), 464–474. https://doi.org/10.1111/j.1549-0831.1996.tb00629.x.

Beedell, J., Rehman, T., 2000. Using social-psychology models to understand farmers' conservation behaviour. J. Rural Stud. 16 (1), 117–127. https://doi.org/10.1016/S0743-0167(99)00043-1.

Birge, T., Herzon, I., 2019. Exploring cultural acceptability of a hypothetical results-based agri-environment payment for grassland biodiversity. J. Rural Stud. 67, 1–11. https://doi.org/10.1016/j.jrurstud.2019.02.006.

Bogue, P., 2013. Land Mobility and Succession in Ireland. Available at: https://www.ifa.ie/wp-content/uploads/2014/01/Land-Mobility-and-Succession-in-Ireland-Report.pdf. Macre Na Feirme.

Brown, L.R., 2009. Could food shortages bring down civilization? Available at: http://www.earth-policy.org/images/uploads/press_room/SciAm-final.pdf Sci. Am. 300, 50–57.

Conway, S.F., McDonagh, J., Farrell, M., Kinsella, A., 2016. Cease agricultural activity forever? Underestimating the importance of symbolic capital. J. Rural Stud. 44, 164–176. https://doi.org/10.1016/j.jrurstud.2016.01.016.

Conway, S.F., McDonagh, J., Farrell, M., Kinsella, A., 2017. Uncovering obstacles: the exercise of symbolic power in the complex arena of intergenerational family farm transfer. J. Rural Stud. 54, 60–75. https://doi.org/10.1016/j.jrurstud.2017.06.007.

Conway, S., McDonagh, J., Farrell, M., Kinsella, A., 2018. Till death do us part: exploring the Irish farmer-farm relationship in later life through the lens of 'Insideness'. Int. J. Agric. Manag. 7 (1), 1–13. https://doi.org/10.5836/ijam/2018-07-03.

CSO, 2012. Census Of Agriculture 2010. Central Statistics Office, Dublin (Stationery Office).

CSO, 2018. 2016 Farm Structures Survey. Available at:. Central Statistics Office, Dublin https://www.cso.ie/en/releasesandpublications/ep/p-fss/farmstructuresurvey2016/.

CSO, 2019. Pension Coverage 2018. Available at:. Central Statistics Office, Dublin https://www.cso.ie/en/releasesandpublications/er/pens/pensioncoverage2018/.

Davidova, S.M., Bailey, A., Dwyer, J., Erjavec, E., Gorton, M., Thomson, K., 2013. Semi-subsistence Farming: Value and Directions of Development. Available at: https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL-AGRI_ET(2013)495861.

Davis, J., Caskie, P., Wallace, M., 2009. Economics of farmer early retirement policy. Appl. Econ. 41 (1), 35–43. https://doi.org/10.1080/00036840600994211.

Dillon, E., Hennessy, T., Moran, B., Lennon, J., Lynch, J., Brennan, M., Donnellan, T., 2016. Teagasc *National Farm Survey; the Sustainability Of Small Farming In Ireland*. Athenry: Teagasc. Available at: https://www.teagasc.ie/media/website/publications/2017/Small-Farms-Survey.pdf.

Donnellan, T., Moran, B., Lennon, J., Dillon, E., 2020. *Teagasc National Farm Survey 2019*. Athenry: Teagasc. Available at: https://www.teagasc.ie/publications/2020/teagasc-national-farm-survey-2019-php.

Downey, H., Threlkeld, G., Warburton, J., 2017. What is the role of place identity in older farming couples' retirement considerations? J. Rural Stud. 50, 1–11. https://doi.org/10.1016/j.jrurstud.2016.12.006.

Duesberg, S., Bogue, P., Renwick, A., 2017. Retirement farming or sustainable growth–land transfer choices for farmers without a successor. Land Use Pol. 61, 526–535. https://doi.org/10.1016/j.landusepol.2016.12.007.

Gasson, R., 1973. Goals and values of farmers. J. Agric. Econ. 24 (3), 521–542. https://doi.org/10.1111/j.1477-9552.1973.tb00952.x.

Gasson, R., Errington, A.J., 1993. The Farm Family Business. Cab International.

Geoghegan, C., Kinsella, A., O'Donoghue, C., 2017. Institutional drivers of land mobility: the impact of CAP rules and tax policy on land mobility incentives in Ireland. Agric. Finance Rev. 77 (3), 376–392. https://doi.org/10.1108/AFR-12-2015-0056.

Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J., Moyano-Fuentes, J., 2007. Socioemotional wealth and business risks in family-controlled firms: evidence from Spanish olive oil mills. Adm. Sci. Q. 52 (1), 106–137. https://doi.org/10.2189/asqu.52.1.106.

Government of Ireland, 2019. Roadmap for Pensions Reform 2018-2023. Available at: www.Gov.ie/Publications. (Accessed 21 February 2021).

Gutter, M.S., Saleem, T., 2005. Financial vulnerability of small business owners. Financ. Serv. Rev. 14, 133–147.

Hansen, B.G., Greve, A., 2014. Dairy farmers' values and how their values affect their decision-making. Agric. Food Sci. 23, 278–290.

Hayden, M.T., 2017. Sensemaking and Financial Decision-Making on Irish Farms. Unpublished Ph.d thesis, Dublin City University.

Hennessy, T.C., Rehman, T., 2007. An investigation into factors affecting the occupational choices of nominated farm heirs in Ireland. J. Agric. Econ. 58 (1), 61–75. https://doi.org/10.1111/j.1477-9552.2007.00078.x.

IFAC, 2019. Irish Farm Report 2019.

Kirkpatrick, J., 2016. Retired farmer–an elusive concept. In: Keeping it in the Family. Routledge, pp. 181–194.

Le Gal, P.Y., Dugué, P., Faure, G., Novak, S., 2011. How does research address the design of innovative agricultural production systems at the farm level? A review. Agric. Syst. 104 (9), 714–728. https://doi:10.1016/j.agsy.2011.07.007.

Leonard, B., Kinsella, A., O'Donoghue, C., Farrell, M., Mahon, M., 2017a. Policy drivers of farm succession and inheritance. Land Use Pol. 61, 147–159. https://doi.org/10.1016/j.landusepol.2016.09.006.

Leonard, B., Mahon, M., Kinsella, A., O'Donoghue, C., Farrell, M., Curran, T., Hennessy, T., 2017b. The potential of farm partnerships to facilitate farm succession and inheritance. Int. J. Agric. Manag. 6 (1), 4–19. https://doi.org/10.5836/ijam/2017-06-04.

Lobley, M., 2010. Succession in the family farm business. J. Farm Manag. 13 (12), 839–851.

Lobley, M., Baker, J.R., Whitehead, I., 2010. Farm succession and retirement: some international comparisons. J. Agric. Food Syst. Community Dev. 1 (1), 49–64. https://doi.org/10.5304/jafscd.2010.011.009.

McGregor, M.J., Rola-Rubzen, M.F., Murray-Prior, R., 2001. Micro and macro-level approaches to modelling decision-making. Agric. Syst. 69 (1), 63–83. https://doi.org/10.1016/S0308-521X(01)00018-X.

Mulligan, E., Wijeratne, D., Maher, M., 2019. Pensions in Ireland: the Perspectives of Irish Citizens and Implications for Pensions Systems and Reforms in Ireland and Other EU Member States. *Institute of Lifecourse and Society*, NUI Galway, ISBN 978-1-908358-61-5.

Norton, R.D., 2004. Agricultural Development Policy: Concepts and Experiences. Food & Agriculture Org.

OECD, 2020. Taxation in Agriculture. OECD Publishing, Paris. https://doi.org/10.1787/073bdf99-en.

O'Donnell, S., Horan, B., Butler, A.M., Shalloo, L., 2011. A survey of the factors affecting the future intentions of Irish dairy farmers, 0 J. Agric. Sci. 149 (5), 647–654. https://doi.org/10.1017/S0021859611000037.

O'Donoghue, C., 2014. Handbook of Microsimulation Modelling. Emerald Group Publishing.

Öhlmér, B., Olson, K., Brehmer, B., 1998. Understanding farmers' decision-making processes and improving managerial assistance. Agric. Econ. 18 (3), 273–290. https://doi.org/10.1111/j.1574-0862.1998.tb00505.x.

Peirano-Vejo, M.E., Stablein, R.E., 2009. Constituting change and stability: sense-making stories in a farming organization. Organization 16 (3), 443–462. https://doi.org/10.1177/1350508409102306.

Pietola, K., Väre, M., Lansink, A.O., 2003. Timing and type of exit from farming: farmers' early retirement programmes in Finland. Eur. Rev. Agric. Econ. 30 (1), 99–116. https://doi.org/10.1093/erae/30.1.99.

Pretty, J.N., Ball, A.S., Lang, T., Morison, J.I., 2005. Farm costs and food miles: an assessment of the full cost of the UK weekly food basket. Food Pol. 30, 1–19. https://doi.org/10.1016/j.foodpol.2005.02.001.

Revenue, 2018. The Farming Sector in Ireland A Profile from Revenue Data. Available at: https://www.revenue.ie/en/corporate/documents/research/farming-profile-2018.pdf.

Riley, M., 2016. Still being the 'good farmer':(non-) retirement and the preservation of farming identities in older age. Sociol. Rural. 56 (1), 96–115. https://doi.org/10.1111/soru.12063.

Sherry Fitzgerald, 2018. Available at https://www.agriland.ie/farming-news/average-farmland-price-rises-to-e9700-ac-sherry-fitzgerald, -last accessed 4/3/2021.

Stephens, M., 2012. Planning farm succession: how to be successful. AFBM J. 8, 61–66, 1672–2016-136556.

Utomo, D.S., Onggo, B.S., Eldridge, S., 2018. Applications of agent-based modelling and simulation in the agri-food supply chains. Eur. J. Oper. Res. 269 (3), 794–805.

Willock, J., Deary, I.J., McGregor, M.M., Sutherland, A., Edwards-Jones, G., Morgan, O., Dent, B., Grieve, R., Gibson, G., Austin, E., 1999. Farmers' attitudes, objectives, behaviors, and personality traits: the edinburgh study of decision-making on farms. J. Vocat. Behav. 54 (1), 5–36. https://doi.org/10.1006/jvbe.1998.1642.