Are we Fit to Farm?

Investigating Irish Farmer Health Status and Sustainability

A report for



Alison Holmes

2019 Nuffield Scholar

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Executive Summary

Rural population health in Ireland has been identified as having been in steady decline over past 20 years. Non-communicable diseases (NCD) are the leading cause of death in Ireland, accounting for 90% of deaths in 2018 (WHO, 2018). Irish farmers are not exempt from falling victim to these statistics and experience disproportionately high prevalence of cardiac disease, diabetes, musculoskeletal disorders and stroke compared to their peers. Recent research by Van Doorne et al., (2017) concluded that Irish farmers are seven times more likely to die from cardiovascular diseases than those with salary paid occupations. Similar studies report very poor health literacy amongst farmers, particularly in relation to nutrition. Poor physical health has been linked to decline in mental health and decreased capacity for resilience. In addition to this, farming has been identified as the most hazardous occupation in Ireland (HSA, 2018). Hence, improving the current status of Irish farmer health has the potential to impact on the sustainability of the farmer, recruitment and retention into farming as a career and improve public perception and the farmer image. This research will provide an insight into current baseline physical health and attitudes toward health and safety amongst Irish farmers and examine how we can take lessons from similar populations at home and abroad in attempt to optimise farmer health.



Fig (i): Contributions to and of the Fit and Healthy Farmer

Main Objectives:

- 1. Investigate health status and health literacy amongst Irish farmers and determine the need and potential role for a structured health and wellbeing promotional and educational campaign for Irish farmers.
- 2. Investigate and determine the need and potential role for integrated health and wellbeing education modules into existing education structures and how might a structured formal approach to CPD benefit this.
- 3. To establish how best to implement and measure and quantify the impact of interventions on farmer health and sustainability and to identify what existing, if any, metrics are available to measure or capture this.

Research Questions:

- 1. What are the barriers/facilitators to achieving good health and wellbeing amongst the Irish Farming population? What initiatives are currently available to promote good health and wellbeing both at home and abroad?
- 2. How does farmer health status impact on people's perception of farming as a viable career/progressive profession? How does it influence recruitment and retention into the industry at home and abroad?
- 3. How does farmer health status impact on farmer's own sense of self-worth and self-perception?
- 4. How does farmer health and fitness impact on wellbeing and adoption of safe practice and hence help in creating a sustainable environment to work in long term?
- 5. How does this contribute to industry progression both in terms of technical progression and development of human capital and "farmer sustainability"?
- 6. Is this issue addressed through farmer education courses and forums, peer learning forums e.g. discussion groups, other educational opportunities?

Recommendations:

- The health of farmers in Ireland should be prioritised as they play a vital role in the economy, contributing to 2.5% of GDP in 2013 (Central Statistics Office, 2013.) Funding for initiatives and interventions to achieve this should be assigned accordingly and a national body or inter-departmental collaboration should be established to oversee same.
- Specific health and activity promotion initiatives should be instigated within this population, along with identification of further research needs and requirements. This would be in line with the objective of the Farm Safety Action Plan to improve the health of Irish farmers and the aims of Healthy Ireland, the national framework for action to improve the health and well-being of people living in Ireland.
- Health Literacy and Self-Management modules should be incorporated into all existing educational structures and curriculum within agriculture to enable culture and practice change.
- There is a need for the development of an objective tool to measure impact and outcomes of initiatives on farmer health and practice.
- A national steering group or alliance, comprised of all strategic partners and stakeholder representatives, and a national researcher collaboration, should be established to adopt a blended research and practical application focused approach to improving farmer health and wellbeing nationally.

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Personal Introduction

I grew up on my family's mixed farming enterprise in Co. Laois, surrounded by 360-degree vistas of the Slieve Bloom Mountains. My grandparents moved here from Kilkenny to set up their own farming establishment, both having strong backgrounds in farming, my Grandmother having grown up on a farm and served in the Land Army during WWII and my Grandfather having grown up and worked on a tillage and equine farm. My father Brian farmed alongside them, and in turn I now farm in partnership with him and we run a dairy and beef enterprise. I was always encouraged to take advantage of any educational opportunities that arose and pursue a career off farm before deciding to pursue a career on



farm. Upon completing a BSc. Hons Degree and MSc. Research Degree in Physiotherapy at University College Dublin, I worked in the HSE for six years. During this time, I also completed my Certificate in Agriculture and began to take on a more significant role in the management of the farm alongside running my own physiotherapy private practice working in elite sport. Having had exposure to so many facets, I developed a keen interest in research and its adoption into practice. In 2016, I accepted a Clinical Tutor in Physiotherapy position at the School of Allied Health, University of Limerick to allow an opportunity to further develop my project management and research skills and participate in a researching clinician type role.

Having a background in both farming and healthcare resulted in me becoming an advocate for farmer and rural population health. Clearly seeing the need for such, I have been involved in many health promotion campaigns for farming and rural cohorts in collaboration with organisations such as Macra na Feirme, the IFA, Sports' Partnerships, inter faculty research collaborations and various farmer discussion groups. Since joining the staff at the University of Limerick I have also developed a clear perspective on the potential for ongoing educational opportunities to have a positive impact on health and wellbeing. In an attempt to become a promotor for opportunities for farmers to engage in positive health behaviours, I became actively involved in the Young Farmer Skillnet. This is a training network for young famers with a directive to research potential for continuing professional development practice in farming in Ireland. I am currently serving as chairperson of the National Steering Group.



Farmer health promotion and management, and the utilisation of existing educational opportunities to optimise same, has become something I am very passionate about as I feel it is essential to ensure the sustainability of farming as a career. Nuffield has given me the opportunity to research this topic further and provided the optimal platform for the dissemination of what I hope is useful information and recommendations that will positively impact on the current and future Irish farming cohort.

Rationale for the report

We frequently use the term sustainability regarding farming with reference to the environment, food production systems, animal agriculture and financial models. However, we rarely, if ever, refer to the sustainability of the farmer as an entity, farmer health and wellbeing, career longevity, adaptability and resilience, farming as an attractive career and the impact on public perception. I feel that it is pertinent to the industry that this aspect of sustainability be addressed. For farming to prosper, the farmer has to prosper. Therefore, farmers have to manage and prioritise self-care to optimise not only their health, but the health and wellbeing of their enterprise also.

During my time working as a physiotherapist in the HSE, I encountered numerous cases of farmers presenting with severe disabilities resulting from stroke, cardiac disease and musculoskeletal conditions such as arthritis, many of which could have been entirely preventable with the adoption of better lifestyle, self-management and farming practices. Many of the farmers I know, both younger and older, tend to represent the clichéd image of the farming as a vocation rather than a profession, that is associated with long hours, physically demanding and labour intensive practices, adoption of poor health and lifestyle practices and high risk of occupational hazards that result in poor health and wellbeing outcomes. I began to ask myself why hasn't this been addressed? Why has this element been addressed for so many cohorts, yet farmers who contribute so heavily to the economy and the social fabric of rural communities, have seemingly been forgotten and become further isolated in an era where social engagement has never been so accessible? How is this clichéd image of the Irish farmer impacting on our ability to recruit and retain young people and females into the profession? Subsequently how might this impact on the consumer's perception of farmers? We market ourselves as the nation of family farms, green grass, fresh air, quality food produce, yet in reality farmers are one of the "unhealthiest" sub-cohorts of the Irish population.

Many educational opportunities, both mandatory and non-mandatory, exist for farmers. Evidence suggests that those who participate in higher level and ongoing education tend to adopt better lifestyle and professional practices and have better health outcomes. In many industries, health and wellbeing education and self-management practice are integrated into educational modules at both undergraduate and postgraduate level. This appears to be a practice that has not yet been consistently adopted in training and education models available for farmers. If we are to promote farming as a viable and sustainable profession, we must first train and educate farmers and adopt professional practices similar to those of other professions. Hence, education in the area of health and wellbeing and self-management should be incorporated into existing educational models available and promoted to farmers.

As previously mentioned, having a background in both farming and healthcare has provided me with the transferable skills and experience to become an advocate for farmer and rural population health. It has also put me in a position to both relate and be relatable to all parties and understand the varying perspectives that may be involved in both the provision and delivery as well as the engagement in initiatives that may improve farmer health and wellbeing. However, before such models can be delivered, we must first understand the current health status of Irish farmers and their perception of same and what the drivers for behaviour change and best practice adoption are in the farming and rural population cohorts. I hope that the report serves to provide some insight into the importance of this topic in relation to the sustainability of the farmer, farming as a career and profession and improve the public perception of the farmer image.

My Study Tour

The countries I visited during my Nuffield experience included the USA, Canada, Singapore, Japan, Indonesia, France, the United Kingdom, Belgium and Italy. I had also planned to visit Scandinavia but due to Covid-19 these visits were unfortunately postponed. Following advice from well-respected people within the industry here in Ireland, I also ensured that I developed a clear and in-depth overview of what was available and undergoing the planning process in this area here at home prior to commencing my travels.



Fig (ii): My Study Tour including the Global Focus Program

Farmers, academics and researchers, health professionals, entrepreneurs and businesses, government officials and diplomats and fellow Nuffield scholars all contributed along my learning journey and ultimately to this report.

Where?	Why?
The United Kingdom	 Similar agricultural landscape to Ireland Multiple models of farmer health promotion initiatives Wales have one of the only established Farming CPD networks internationally Health and wellbeing training incorporated into undergraduate training Rural Support farmer health clinic models Focus on behaviour change is central to many models
Denmark	 Excellent Health and Safety records The Department of Agriculture have employed health professionals as consultants to monitor farmer health and develop appropriate programs
Norway Sweden Finland / Estonia	 Very good approach to health and safety Enforced annual leave scheme for farmers Strong emphasis on work life balance Can also look at forestry and aquaculture industry practice
Australia	 Some of the leading international researchers in this area based at Deakin University Well established National Centre for Farmer Health that runs multiple program types including those for health professionals and ag advisors
Canada / North America	 Very strong and proactive CASA, well known and established research team in Saskatoon that head the north Americas farmer H&S projects

Table (i): Initial Travel Plan

Acknowledgments

I would like to take this opportunity to thank the scholarship sponsors, without their investment the Nuffield journey I have undertaken to date, and subsequently this report would not have been possible.

I would also like to thank and acknowledge Nuffield Ireland who invested not only their time in abundance, but also lent their experience, expertise and provided a constant example of leadership and provision of mentorship over the past two years along with members from the wider Nuffield International community. Thank you to Jer Bergin, my Nuffield mentor, and a special word of thanks must go to John Tyrell whose patience is endless.

Thank you to all the family and friends who supported me along the way, including my fellow 2019 scholars. In particular to my parents Brian and Rosemary for their continued support and never questioning when I fail to be seen in the parlour for weeks on end!

Thank you to my employers and colleagues at the University of Limerick's School of Allied Health for facilitating me to participate in this scholarship.

A final and important word of acknowledgement and thanks to all those who contributed to my Nuffield journey to date both at home and abroad, generously gave their time, welcomed me into their workplaces and homes, shared their experiences and insights, lent their expertise and constantly challenged me to be a better version of myself.

The Nuffield Values refer to Respect, Humility, Reciprocity, Collaboration and Life Long Learning, all of which I experienced in abundance this year as a result of the kindness and generosity of other. Once again, THANK YOU!

Abbreviations

CEJA Conseil Européen des jeunes agriculteurs /Euro Council of Young Farmers

CPD Continuing Professional Development

CSO Central Statistics' Office

EIP European Innovation Partnership

ENRD European Network for Rural Development

EU European Union

GVA Gross Value Added

HI Healthy Ireland

HSA Health and Safety Authority

ICOS Irish Co-operative Society

IFA Irish Farmer's Association

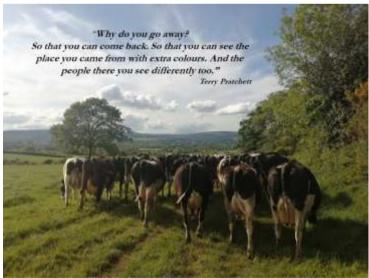
NCFH National Centre for Farmer Health

UK United Kingdom

USA United States of America

Objectives

- Investigate health status and health literacy amongst Irish farmers and determine the need and potential role for a structured health and wellbeing promotional and educational campaign for Irish farmers
- To establish how this compares with the farming population profiles of other countries and what interventions have those with healthier populations employed to achieve same
- To investigate the impact of both true and perceived farmer health on the perception of farming as an occupation and how this impacts on;
 - a. Farmer health and the suitability and sustainability of farming as a career
 - b. Recruitment into the industry
 - c. Public and consumer perception and image.
- Investigate and determine the need and potential role for integrated health and wellbeing education modules into existing educational structures. How a continuing professional development model could facilitate this?
- To establish how best to measure and quantify the impact of interventions on farmer health
 and sustainability and to identify what existing, if any, metrics are available to measure or
 capture this
- To investigate and identify successful models and examples of these internationally amongst the farming alumni.



Picture Source: A. Holmes

Introduction

Agriculture as an industry significantly contributes to the Irish economy, attributing for 7% or €13.9 billion of GVA and approximately 10% of employment (CSO, 2018). Agriculture remains central to the Irish economy and its rural fabric and is the topic of many recent debates and headlines relating to its viability, sustainability and future. However, the key figure often omitted from public and policy discussions is perhaps the most important cog in the wheel. Primary production on Ireland's 137,500 farms accounts directly for 1.2% of GVA, with 265,400 reporting to work on farms (Farm Structure Survey, 2016; CSO, 2016). The Irish farming cohort is often forgotten about as a personal entity despite having strong representation and lobby groups on more prominent agricultural issues. Much of the policy making and public discussion in relation to agriculture focuses on its viability and sustainability as an industry yet the topic of farmer viability and sustainability is often overlooked. Hence the question must be asked, is there a viable agriculture industry without a viable farmer and labour force?

There is well established consensus that Irish farmers are at high risk of occupational injury and associated disease (HSA, 2018). Not surprisingly this has resulted in the focus in relation to farmer health policy in Ireland remaining largely fixed on farm safety rather than farmer health. However, it is often the less commonly reported non communicable diseases or "silent killers" such as inactivity, stress, fatigue, heart disease, stroke and diabetes that impact significantly on farmer health status in Ireland, and oftentimes contribute to farm accidents and related injuries. Although historically farming is perceived as a physically active profession (Blair et al, 2005) the concept of being 'farming fit' is no longer supported by either anecdotal evidence or research. In contrast to research previously conducted concluding that farmers were the heathiest occupational sector in Ireland (O'Shea, 1997), more recent research demonstrates a trend reversal, indicating that famers are the unhealthiest occupational sector of the Irish population with the highest level of non-communicable disease (NCD) related mortality (Smyth et al, 2012; Storey et al., 2016; van Doorn et al, 2018). NCDs remain the highest cause of mortality in Ireland, accounting for 90% of deaths (WHO, 2018). Other predominant causes of ill health status in Irish farmers include those associated with respiratory disease, manual handling risks, occupational related infections and noise pollution (DAFM, 2020). This trend contrasts with male farmers across Europe, who present with lower levels of all-cause mortality including cardiovascular disease (Toch-Marquardt et al, 2014).

Research evaluating the health behaviours of farmers in Ireland demonstrated that although farmer's self-perception of health status was good, poor acknowledgement and failure to address ill-health by the participants is also a common occurrence (Storey et al, 2016). Farmers are less likely to seek medical consult and assistance, a common finding in male dominated cohorts. Storey et al., (2016) also reported that although farmers tend to report healthier alcohol, smoking and physical activity behaviours than the general population, a higher prevalence of overweight and obese individuals is reported within the farming population, proven independent risk factors for the development of chronic disease according to the WHO. In contrast, more recent research conducted by van Doorn et al (2018) demonstrated that younger, male farmers (<45 years of age) were more likely to engage in harmful health behaviours such as smoking and binge drinking one or more times per week. These behaviours pose a threat to

occupational health and safety. With the Irish farming cohort demonstrating many of the risk factors and behaviours associated with NCDs, it is important that their health literacy and overall health status is addressed and recognised as part of the Healthy Ireland strategy. Farmers attribute much of their occupation related stress and vulnerability to uncontrollable factors such as economic factors, governmental decisions and climate for example. Health and wellbeing status is a largely controllable factor in contributing to the success of both the farmer personally and their enterprise, yet often remains unrecognised as such until it becomes an issue that may cause personal and financial loss.

It is theorised that rising levels of physical inactivity in the farming population may be attributed to factors such as increasing agricultural mechanisation leading to decreased physical work, decreasing social opportunities and local recreational activities, particularly apparent in rural areas, increasing lifestyle health risks such as obesity and chronic pain (Brumby et al, 2011). High prevalence of self-reported arthritis is of concern in farmers (van Doorn et al, 2017). Further research by the same author identified associations between increased age (>45 years) and full-time farming and dairy farming with poorer self-reported health outcomes (van Doorn et al, 2018). These factors leading to decreased physical activity may play a role in explaining increasing ill-health in the Irish farming population. Additionally, factors such as lack of services, lack of reliable information, and a culture of stoicism combine to form a culture of poor GP attendance in rural dwellers (Heenan, 2006).

Physical and mental health are intertwined and either should not be addressed in isolation as the status of either has a symbiotic relationship with the other. Mental health can be defined as "a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2004). Research has indicated that farming is like no other occupation when it comes to stress related illness and health concerns as the farmer feels like the work never seems to be done (Daghagh Yazd et al., 2019). Many farmers often prioritise the health of their animals and crops over their own health and wellbeing. For this reason, it is important that all aspects of farmers' health and wellbeing are addressed. Poor accessibility to mental health resources coupled with a reluctance in mental health issue reporting poses a significant difficulty in rural areas (Johnson et al, 2011). Rural dwellers, and male farmers in particular, have been shown to demonstrate significant hesitation in acknowledging mental health difficulties and the impact these may have on physical health, them personally and their enterprise (Johnson et al, 2011; Richardson et al, 2014; Hammersley et al, 2020).

The 2016 Healthy Ireland report, with a representative sample of 7,498 participants aged 15 years or older, reported only 84% of people nationally rate their health as good or very good. Thirsty percent respondents reported having mental health issues currently or previously and 28% reported having a chronic condition or illness. The report also indicated that 92% of the population would like to make lifestyle changes to improve their health. Overall, 40% of the general population desired to become more physically active, 30% desired to sleep better and 29% desired to eat more healthily. So how do we start to improve health literacy in farmers and initiate behaviour change to reverse these trends of health status deterioration?

Teagasc, a state agency providing education, research and advisory in agriculture, rural development, food and horticulture in Ireland, have previously promoted healthy lifestyle change in the farming community. These efforts have been replicated by similar agencies such as the Health and Safety Authority and the Department of Agriculture as well as stakeholders such as agricultural co-ops and insurance companies. To date various health promotion initiatives have been undertaken in the farming cohort in Ireland, however minimal research has been done to evaluate the effectiveness of these campaigns and the subsequent impact on farmer health status and health behaviours.

This report aims to look at both what is happening at home and abroad on the topic of farmer health and wellbeing and to make recommendations on how to use this information to improve the status of farmer health and wellbeing in Ireland.

The UN Sustainable Development Goals and Health Promotion

Nuffield Scholars have had a growing presence at the United Nations CSF in recent years. The CSF held in Rome and 2019 saw a strong contingent attend from Nuffield Ireland, a contingent the author had the privilege of being part of. As a result, the Sustainable Development Goals have come to the fore for consideration as part of the Nuffield learning and development journey. The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere (www.un.org, 2020). The SDGs refer to seventeen goals adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development. This agenda defines sustainable development as;

- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs
- Requiring concerted efforts towards building an inclusive, sustainable and resilient future for people and planet
- Requiring three core elements crucial for the well-being of individuals and societies
 to exist in harmony: economic growth, social inclusion and environmental
 protection.

It is important that the SDGs are taken into consideration and promoted by industry leadership. Three of the seventeen SDGs are particularly relevant to this report;

- SDG #3 To ensure healthy lives and promote wellbeing for all at all ages
- SDG #4 To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG #17 Encouraging global partnerships for sustainable development



Fig1: UN SDGS, taken from www.un.org

Health promotion is the process of enabling people to increase control over, and to improve their health (Health Promotion Glossary, 1998). The first International Conference on Health Promotion was held in Ottawa in 1986. The basic strategies for health promotion identified in the Ottawa Charter were: advocate (to boost the factors which encourage health), enable (allowing all people to achieve health equity) and mediate (through collaboration across all sectors).

The World Health Organisation held their 9th Global Health Promotion Conference in Shanghai in 2016, titled 'Promoting health in the Sustainable Development Goals: Health for all and all for health' in an aim to highlight the critical links between promoting health and the 2030 Agenda for Sustainable Development.

The WHO refers to five main pillars for successful health promotion as illustrated in Fig 2 below. The author referenced these pillars as a way of evaluating and reflecting on approaches and initiatives seen in improving farmer health and wellbeing both at home and abroad.

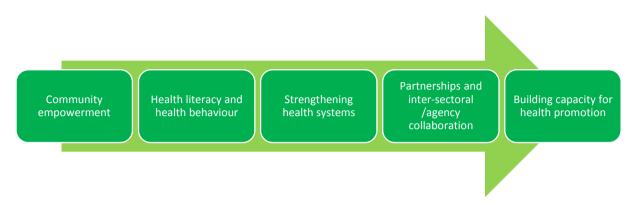


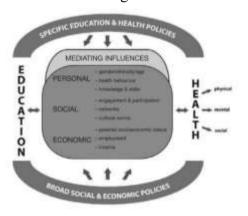
Fig 2: Main Pillars of Health Promotion, WHO

Education and Impact

The relationship between health and Education

Extensive research has been conducted to better understand the many ways in which education influences health. A strong positive relationship exists between education and health outcomes whether measured by death rates (mortality), illness (morbidity), health behaviours or health knowledge. The literature would agree there is reasonably strong evidence of large effects of education on health. Evidence suggests that those who achieve a higher level of educational attainment are more likely to engage in healthy behaviours and less likely to adopt unhealthy habits and is particularly true in relation to physical activity, diet, and smoking. (IPH, 2008; HSE, 2011; HI Survey, 2016). Those with more education are likely to have greater knowledge of health conditions and treatment regimens and have better self-management skills than those with less education. This has been found across a range of illnesses including non-communicable diseases such as diabetes and obesity (Goldman and Smith, 2011) There is also evidence to suggest that those with more education have higher participation rates in prevention programmes such as cancer screening.

Education plays a crucial role in the development of skills and habits that allow for socialisation, social cooperation and increased participation in society. Those with higher levels of education are more likely to join voluntary associations, participate in community activities and participate in political activities such as voting (CSO,2008). These activities result in increased levels of social capital, again associated with better health. Participation in adult learning courses has also been shown to similar impact on civic and social participation. An extensive social network can reduce the risk of mortality and have a positive impact on mental health as well as enhancing an individual's self-efficacy, psychological resilience and coping



mechanisms (Christensen et al., 2006). Participating in an environment where others have acquired specific cognitive and personal development skills can support positive attitudes towards health (IPH, 2008). A number of suggestions have been made as to why people with more education are more likely to have better health related behaviours such as those with more education are likely to allocate more resources to health and derive greater health benefits from this investment than those with less education.

Fig 3: Diagram showing links between education and health (IPH, 2008)

Health Literacy

Kickbusch et al. (2005) defined health literacy as the ability to make sound health decisions in the context of everyday life - at home, in the community, at the workplace, the healthcare system, the market place and the political arena (Kickbusch et al 2005). Higher levels of health literacy increases the opportunity for individuals to reflect on their situation and initiate change. Limited health literacy is associated with increased health care costs, higher rates of hospitalisation and greater use of health care services (McCray, 2005).

There is a belief amongst many farmers that health is only something one has to be concerned about when it fails. Farmers also tend to subjectively over rate their health status as very good and good when compared to objective measures. Research by Richardson et al. (2014)

highlighted the phenomenon of the younger generation of farmers' (especially young men) belief that being healthy solely relates to their ability to carry out their normal daily tasks, and that they often have the view that they are impregnable to ill-health. To ensure improved health status of Irish farmers we must first look to education and the improvement of health literacy.

Health literacy has been on the periphery of Irish policy for two decades now, the initial incentive stemming from the International Adult Survey conducted in Ireland in 1995. The EU Health Literacy survey undertaken in 2012, revealed that 4 in 10 Irish adults displayed limited health literacy. Much research has been undertaken on the impact of initiatives undertaken to improve health literacy in farming populations internationally. Coman Adina et al. (2020) concluded that a focus specifically aimed on health education and promotion for farmers has the potential to increase their level of health literacy while increasing the quality of life for both the farmer and farmer's family. Research from Australia demonstrates the importance of education focusing on farmers' health and safety and its impact on encouraging the adoption of health-enhancing behaviours on farms (Brumby et al., 2009a).

Ireland has had a number of nationally implemented health initiatives undertaken in the past, with more currently ongoing, aimed at improving the health and health literacy status of Irish farmers. These include but are not exclusive to initiatives such as the collaborative publication of the 'Staying Fit for Farming' booklet in 2013, the 'Farmers have Hearts' programme (van Doorn et al., 2017), "Fit Farmers" and "Make the Moove" initiatives in 2019 and the launch of "On Feirm Ground" in 2020. However, the development of a centralised collaborative inter-agency approach to farmer health, with clear governance, has yet to be established.

There is an evident link between health education and health literacy, however it is not often addressed in research and practice regarding the assessment of farmers' understanding and practice of health enhancing behaviours (Berkman et al., 2011). The development of health enhancing skills and abilities ensures better health outcomes for the farmer and their family. Despite all of this evidence, health literacy remains glaringly absent from the majority of the agricultural education and training curriculum here in Ireland. Mandatory education and training affords a priceless opportunity to put health education on the agenda for all farmers be it through health promotion, health literacy initiatives or promoting adoption of best practice for self-management. Yet it remains severely under-utilised.

Case Study: Community Based Initiatives in Ireland

Ireland has seen a recent surge in interest in the topic of farmer health. In response many community-based initiatives have been successfully undertaken and provided much groundwork and justification for further similar projects to be delivered on a national scale. Examples of these include the Farmer's Have Hearts pilot, Fit Farmers initiative in Roscommon, A Lifestyle and Physical Activity Program in Co. Laois and Make the Moove, an initiative instigated by members of North Tipperary Macra na Feirme. These are just to name a few. All initiatives aimed to improve farmer health and wellbeing through provision of support services, peer led activity promotion and participation, education on healthy behaviours and lifestyle choices and adoption of good health and wellbeing practices to promote resilience. There are many lessons to be taken from such initiatives and further research is needed to both

accurately measure the impact of these initiatives on health and wellbeing long-term and to ensure efficient and justifiable implementation of future initiatives for maximum effect.



Participating in a community based peer led exercise class for farmers in Canada. Source: Author

Education and Continuing Professional Development

Many reports have highlighted the recognition by farmers of the value of knowledge development in agriculture today. CEJA's European Young Farmer's Survey (2017) reported that Knowledge Development was one of the three most important on farm investments young farmers would make to develop their farm in an economically sustainable way. The same survey saw 62% of Irish young farmers respondents highly value knowledge development. Fifty eight percent of respondents considered education and training opportunities as most necessary to lead a vibrant and sustainable lifestyle in a rural community.

Continuing professional development (CPD) is defined as the learning activities professionals engage in to develop and enhance their abilities (CPDCS, 2018). The development of a CPD network in Ireland is currently under consideration by the Department of Agriculture. A report undertaken by Macra Agricultural Skillnet in conjunction with Limerick Institute of Technology and Broadmore Research in 2019 concluded that a structured, centralised CPD system for farming and agriculture in Ireland is needed and would be welcomed. A survey of Irish farmers was undertaken as part of the overall report. The main findings from the survey detailed in the report as relevant to this author's work include;

- 51% of survey respondents reported impact on lifestyle, health and wellbeing as a main area of measuring implementation of learning from training
- 68% of respondents believe there is need in farming for a system which recognises participation in ongoing education / upskilling / training
- The main organisations respondents would like to see recognise CPD include DAFM, Bord Bia, Teagasc, financial institutions and insurance companies
- 87% of respondents felt that CPD would benefit Irish farmers, farming and practice.
- 75% of respondents agree that CPD could improve health and wellbeing
- 69% agree that CPD could lead to more defined career pathways and opportunities

In addition, focus groups and industry feedback highlighted CPD as an entity that could provide important benefits in the area of farm health and safety.

Despite the lack of a structured CPD model within agriculture in Ireland, there are numerous opportunities for ongoing education and upskilling provided by DAFM, Teagasc, Macra and IFA Skillnet and many other industry providers. The scope for elaboration and incorporation of

topics in relation to self-management and farmer health and wellbeing is vast. In addition to this, there is a clear need for increased emphasis on these topics within both undergraduate and postgraduate education curriculum models. Hence, for maximum impact these topics must be consistently incorporated into education structures and models.

Case Study: Farming Connect CPD Wales

The author attended Farming Connect's inaugural "Innovation and Diversification" conference as part of their Innovation and Diversification Week in 2019. The event afforded the author the opportunity to see Farming Connect in action and meet with staff members to gain insight and learn from their experiences to date. Eirwen Williams, Director of Mentor a Business schemer with Farming Direct provided an overview of the history of Farming Connect, it's establishment, funding and support mechanisms. Farming connect was introduced and funded in Wales under the Rural Development Plan 2014-2020 (RDP) and is integrated with other government support systems including Business Wales and Resource Efficient Wales. The programme's main objective is to support the development of a more professional, profitable and resilient farming sector. Farming Connect brings together key stakeholders, organisations and institutions that support the farming and forestry industries. The organisation offers more than sixty accredited courses for farmers and foresters. It's Agri Academy offers a personal development training program to farmers and agri-prenuers. One of the elements of Farming Connect is a fully funded CPD recording system to record all knowledge transfer and training activity undertaken by clients. Upon registering with Farming Connect, or accessing their services, one is registered on a centralised online system that records attendance and participation in future CPD. Farmers may access these records online at any time. Examples of CPD include completion of training, E-learning online and Blended courses and knowledge transfer events accredited by Farming Connect. Farming Connect CPD services are free to farmers. RDP funding has meant that there is minimal or no financial burden placed on the farmer for participation in CDP events/activities.

Farming Connect CPD is deemed beneficial for those wishing to provide evidence of ongoing training and education to future employers; proof of training undertaken for farm assurance schemes; and proof to customers and consumers of the farmer's ongoing commitment to continuing education and improving practice. The Welsh Lamb and Beef Producers now allows farmers to upload their CPD records onto their system. An increasing number of organisations are now looking for evidence of CPD in the UK. Proof of participation in accredited CPD is a requirement of the Red Tractor Assurance scheme.

The programme is continuously expanding in terms of the organisations that are willing to register as providers/ trainers. Alternative education and CPD providers, such as co-ops, agricultural advisors, financial institutions and advisory bodies can register with Farming Connect to have their event or training accredited and become part of the programme.

In addition to CPD, Farming Connect also provide advisory services, develops directories and resources for farmers and farm business and runs a peer-mentoring scheme. In 2019, Farming Connect had completed formal Mentorship Training with 63 mentors involved in a variety of

farming and forestry enterprises. Farmers and "agri-preneurs" can apply for the scheme, which provides up to 15 hours of free mentorship for eligible mentees. Farming Connect funds the entire cost of both the training of mentors and the mentorship service to the mentee. The scheme aims to connect mentors with a minimum of fifteen years' experience and "who have been there and done that" with suitable mentees so that they can build relationships based on mutual respect and trust and create an environment for peer learning. Peer learning allows identification of goals and fulfilment of potential for the mentee. It provides an opportunity to develop communication skills, share knowledge, learn and expand outlook and develop new insight into approaching situations and overcoming challenges associated with farming. Mentors are also fully trained and facilitated to further development of skills in coaching and people management. Eirwen and her colleagues spoke extensively about the scheme and its growing popularity, highlighting the value farmers put on learning from each other and striving to improve practice and management on their own enterprises. With a similar farming landscape and Government directed CAP support scheme to Ireland, Farming Connect serves as a very positive and well run CPD system that has been well accepted by farmers for their benefit with high levels of engagement to date.



Farming Connect's Eirwen Williams and colleague pictured with the author at the Innovation and Diversification Conference, September 2019.

Of additional interest to the author was Eirwen's involvement in research on the topic of evaluation of the impact of knowledge transfer activities. The ability to objectively and reliably measure same appears to prove difficult and is lacking in most educational and knowledge transfer systems. Appraising the efficacy of such interventions is vital to their continuous development and justification, both for stakeholders and funders. To date a successful model for achieving same ha not been identified or agreed upon. More research is needed in this area, something Eirwen and her colleagues have undertaken and continue to work on in relation to Farming Connect.



"The key to accommodating change is putting land into the hands of the educated"

Mr. James Moody, Speaker at the Rural Innovation and Diversity Conference, Wales, 2019

Farmer Mindset

Factors Influencing Engagement, Adoption and Behaviour Change

The approach to education and promotion of adoption of best practice in relation to personal health should be no different to that of other areas in farming. It is widely accepted that understanding the attitudes, beliefs, and personal circumstances of individuals is important for behavioural change interventions. Many personal factors such as age, gender, economic status, educational level, experience, and beliefs, are key determinants of behaviour; thus presenting a significant challenge to one-size-fits-all interventions. A report by Rose et al. (2018) concluded that by focussing on changing the behaviour of individuals in the farming community, the important influence of family, friends, peers, and advisers was often both under-appreciated and under-utilised. In the medical literature, for example, the opinion of family and friends seemed to be valued much more than advice offered by a health professional. An abundance of evidence in health literature promotes the establishment of a support network of like-minded individuals, peers and trusted facilitators to change behaviours collectively. In agriculture, research has illustrated the importance of advisors to farmer decision-making, including vets, agronomists, land agents, business advisers, seed/stock merchants, amongst many others (AIC, 2013; Ingram, 2008; Rose et al., 2018). Given that family, friends, advisors, and peers can play such a key role in influencing farming behaviour, it is essential for interventions and knowledge exchange activities to take a holistic approach maximising the influence of all of the above on the farmer. Indeed, much of the literature on behaviour change interventions in developing world agriculture suggests that a household approach is more common (e.g. Hockin-Grant and Yasué, 2017). Given the tradition of the family run farm in Ireland, it is unsurprising that the entire family plays a key role in decision-making at many levels, hence should be included as a whole in health education and promotion.

On observation of the findings of reports and studies examining successful models for behaviour change in general in farmers and male dominated groups many common themes arise (Rose et al., 2018). These include but are not exclusive to the following;

- Encourage a research culture that is participatory and practice relevant making findings accessible and relevant to the farmer
- Utilise existing formal or informal networks to communicate with farmers. This will build trust, help to co-produce relevant knowledge, and help knowledge exchange facilitators to understand attitudes and beliefs towards particular behaviours.
- Adopt a hollistic approach to knowledge exchange. Involve multiple actors from groups that exert the greatest social pressure on farmers, thereby helping to shift social norms and attitudes (eg friends, advisors, family)
- Involve friends and families in knowledge exchange activities to simulate and maximise peer learning opportunities
- Farmers should be assigned leadership roles within initiatives to promote engagement and empowerment
- Invest in trained facilitators in order to increase the amount of face-to-face knowledge
 exchange with farmers and other practitioner groups. This is deemed preferable as
 means of information delivery compared to provision of literature and self-directed
 education.

- Recruit 'peer champions'. Farmers are more likely to listen to advice if it is delivered
 by someone they can relate to. Opportunities for peer learning should also be
 encouraged.
- Target messages carefully, know your audience and their needs. Tailor initiatives and education opportunities to relate to these. Present optimistic messages to farmers, stressing the benefits of adopting particular behaviours.
- Prove the value and ease of adoption if farmers do not perceive that there is obvious and measurable value in adopting a new behaviour, then they are likely to stick with the status quo. Outcome measures to prove the value of adopting new behaviours should be utilised.
- Incentivise behaviour change using multiple reward mechanisms for sustained improvements. These may require support from the wider industry such as tax reliefs, insurance company incentives and access to educational schemes and advisory supports.

Based on these observations it is clear there should be much focus on face to face, interactive knowledge exchange and peer learning opportunities delivered in a holistic manner. Many of the case studies presented later in the report as suggested examples of best practice adopt this approach to good effect, impacting greatly on their success.

Case Study: National Centre for Farmer Health Australia

The National Centre for Farmer Health (NCFH) in Australia provides an impressive example of a collaborative and holistic approach to the management of farmer health and wellbeing. Founded in 2008 by the Victorian Government's Future Farming Strategy and the Helen and Geoff Handbury Trust, The NCFH is a partnership between regional health service Western District Health Service and Deakin University. Its vision was to be a thriving centre inspiring quality education, research and service delivery through innovative partnerships that advance agrihealth and medicine both locally and globally.

The NCFH evolved from two main areas:

- The Sustainable Farm Families (SFF) program a health promotion program which addresses farmer health, wellbeing and safety issues. The core message of SFF is that the most important aspect of a healthy Australian farm is a healthy farm family.
- A Victorian Travelling Fellowship, similar to the Nuffield Scholarship concept, which
 examined overseas models for working with agricultural populations and provided the
 five key strategic areas which have been adopted by the NCFH as demonstrated in Fig
 4.

The NCFH offers a true multi modal approach to improving farmer health and wellbeing. In association with Deakin University they boast an impressive research program and staff including Dr. Susan Brumby and Dr. Alison Kennedy, authors of numerous peer reviewed publications in the area. The author had the opportunity to communicate with Dr. Alison Kennedy on several occasions and meet in person in September 2019. Dr. Kennedy emphasised the importance of this multi modal approach, as the diversity of stakeholders in the agriculture industry does not allow for a one size fits all approach.

Their partnership with Deakin University also offers post-graduate training courses and opportunities in farming and rural for health care providers. The Graduate Certificate of Agricultural Health and Medicine delivers specialist knowledge and skills to students currently employed, or wishing to gain employment, in rural and remote health-related professions. This

course aims to provide health professionals with the necessary skills and knowledge to improve the social, physical and mental health of agricultural workforces and farmers and farming families across Australia. This a particularly innovative and novel approach to addressing the issue of poor levels of health seeking behaviours in farmers. This approach would align with similar approaches to upskilling healthcare workers in Ireland engaging with particular patient cohorts, the "Make Every Contact Count" initiative and should be considered for inclusion in same.



Fig 4: NCFH Strategic Plan 2019-2023, Source www.farmerhealth.org.au

The NCFH has developed an abundance of resources for farmers and those working with farmers in an attempt to bring the topic of health and wellbeing to the fore in Australian agriculture. They also aim to maximise accessibility of these resources to farmers. Resources include online tool kits, checklists and information resources, a psychology service, signposting to alternative support services, online health assessments and health provider resources to name a few. Dr. Kennedy stated that podcasts have become increasingly popular resources and a great way to disseminate information quickly and efficiently. The NCFH also provide a plethora or services both at their regional centres and based in the communities, again constantly focusing on visibility and accessibility. These include Agri Health clinics and hubs offering 90-minute comprehensive health screenings and Health and Lifestyle assessments, both undertaken by qualified health professionals, many of whom are graduates from the post graduate programs described above. The NCFH also provides interactive community based presentations and workshops focusing on supporting the health and wellbeing of farming communities in addition to more comprehensive educational and training modules such as the interactive online "ifarmwell" programme.

Key learnings from the NCFH highlight the importance of a collaborative approach to improving farmer health that engages all relevant stakeholders including health professionals. The alliance with an academic institute allows for the ongoing completion of research which

identifies need and provides justification for as well as informing programme design and content choice to maximise impact. The blended, multimodal approach of service and resource delivery maximises visibility, accessibility and allows outreach into the farming community. All of the above are approaches and learnings worth consideration for adoption here in Ireland when designing programmes aimed at farmer education and the promotion and adoption of best practice and behaviours in relation to health and wellbeing.

Case Study: Rural Support Northern Ireland

Following on from an impressive address given at the jointly run Embrace and Rural Support Conference in 2019, the author spoke with Jude McCann, UK Nuffield Scholar and then chief executive of the organisation. Jude provided an overview of the Rural Support service, in addition to sharing his insights and findings from his own Nuffield journey examining farmer mental health and resilience.

Rural Support, based in Co. Tyrone, was formed as a charity in 2002 in response to the severe impact on farmers and rural communities as a result of the Foot and Mouth epidemic. There was evidence of distress within the rural community and the need for a support service was identified. In response, Rural Support established a helpline that offers a listening and signposting service for farmers and farm families. Rural support provides services to address financial and debt problems, inheritance issues, physical and mental health concerns, farming paperwork and bureaucracy. Rural Support is a registered charity and receives funding from the Northern Ireland Department of Agriculture, Environment and Rural Affairs, HSC Public Health Agency, NFU Mutual and The Prince's Countryside Fund.

Rural Support adopts a very holistic approach to supporting farmers and farm families in Northern Ireland. Their initiatives aim to increase farmer resilience through provision of education and training on a variety of topics such as business management, self-management, health and wellbeing. Many of their programmes are multi-modal in approach and are designed by farmers, for farmers, again reinforcing the importance of peer learning and relatability to successful engagement. Rural Support also boasts a team of twelve agri-business mentors based across Northern Ireland delivering on farm business support. The mentors' role is to provide independent, confidential support to farm family members to identify solutions and determine the actions necessary to improve the circumstances. Mentors aim to provide objectivity, knowledge and empathy to assist families to take the necessary steps to address problems and implement change. In addition, Rural support runs regular promotional campaigns, conducts research, organises events and provides a multitude of educational opportunities and resources that aim to improve farmers' and farm families' education, self care and positive health and wellbeing. For example, one of their most recent campaigns entitled "Protecting the Asset that is you" provided online education on topics related to improving farmer health and wellbeing. Content aimed at farmers focussed on topics such as sun and skincare, smoking cessation, diabetes and heart health.

In association with Rural Support, the HSC Public Health Agency fund the Farm Families Health Checks Programme. Recognising that farmers often work anti-social hours which can lead to social isolation and often difficulty accessing traditional health care services, the Farm Families Health Checks Programme offers a means for farmers and their families to access health checks from a portable clinic and from local community settings. This innovative project consists of a mobile unit that locates itself at local markets and community events across Northern Ireland. The service takes a two-fold approach comprised of both medical and lifestyle

checks. It offers on-the-spot health checks consisting of Blood Pressure monitoring, Body Mass Index scoring, cholesterol check and diabetic screening. In addition, individual lifestyle advice will be given on a range of health issues, and onward referral completed to local support services as required. Provision of the service within the farmer's local and familiar community promotes accessibility and engagement and creates awareness of the importance of health surveillance amongst the community, all of which contribute to engagement and adoption of health seeking behaviours as previously discussed within this report. Since it's establishment in 2012, more than 20,000 farmer health checks have been completed. This is a highly significant number given Northern Ireland has in the region of 25,000 family farms.

Rural Support and Farm Family Health Checks serve as excellent examples of successful inter departmental and industry collaborations, providing accessible education and health checks to farmers and their families. The participation figures demonstrate the clear need for such initiatives and similar initiatives should be considered for establishment to meet the needs of farmers south of the border. Inter-agency collaborations would further the success of such an initiative and serve to provide funding for same, with the potential for EIP and CAP funding to also be utilised for same.

Case Study: "On Feirm Ground"

The aim of this project is to develop a bespoke farmers' health training programme that equips frontline agricultural advisors with the knowledge, skills and competencies to engage and signpost farmers on health issues, and to mainstream a health promotion/prevention focus into farming practices and farm discussion groups (Hammersley et al., 2020). The project is jointly funded by the Department of Agriculture, Food & Marine, the Department of Health, the Health Service Executive, Institute of Technology Carlow and through a Teagasc Walsh Scholarship. A multistakeholder Project Steering Group, chaired by the Men's Development Network (MDN), is overseeing the project. The author is currently a member of this steering group. The training programme is being developed under the auspices of Engage, Ireland's National Men's Health Training Programme.

Research to date has been conducted by IT Carlow Men's Health Institute and Teagasc Walsh Fellowship PhD candidate Conor Hammersley, under the guidance of Dr. Noel Richardson. Focus groups were undertaken with key stakeholders (farmers, agricultural bodies, advisors) in order to provide clear, actionable recommendations to inform the design and rollout of the training programme. The training programme is currently being finalised and it is envisaged



that 800 agricultural advisors will complete the training in 2021. The programme was recently launched by Minister Heydon. This initiative demonstrates an inter-agency collaboration in the design and delivery of a training programme. It also utilises existing knowledge transfer pathways that farmers are familiar with and have a pre-existing level of trust and history of engagement in.

The Author and fellow 2019 Nuffield Scholar Dr. Karina Pierce, with Dr. Karen Fabbri of the Directorate-General RTD Research and Innovation, European Commission, Brussels, Feb 2020.

Conclusions

Farmers in Ireland experience a disproportionate burden of health problems compared to other occupational group, in particular cardiovascular disease, cancer, mental health and suicide (Hammersley et al., 2020). This results in great financial and social cost, affecting themselves, their families, to their livelihoods and their wider community and industry. Traditionally farmers have tended to prioritise the welfare of their farms over their own health needs. Suboptimal health can have a significant impact on farmers' and their families' lives, resulting in higher risk of farming injury, disability, and premature death (Bloom et al., 2011). Poor health limits participation not only in farming activities, but also in social and community activities. Together, these factors may negatively impact profitability and sustainability of farming, in turn impacting on recruitment and retention.

Issues such as farming masculinities and rural isolation make farmers a 'hard-to-reach' group to engage with on health matters and health promotion interventions (Ní Laoire C, 2005 in Hammersley et al., 2020). Farmers must perceive interventions as worthwhile, positive and relatable to promote successful engagement. The author identified several common themes in successful interventions viewed to date. These are detailed in Figure 5 below.

With much talk of CAP reforms, the environmental and societal impact of farming and the importance of rural development and the sustainability of the agricultural industry and its practices, this report serves as a timely reminder that farmers' health is essential in terms of farm productivity and profitability. A viable farm cannot exist without a viable farmer, and for the latter we must ensure we are "Fit to Farm" in a personal capacity in addition to public and consumer perception.

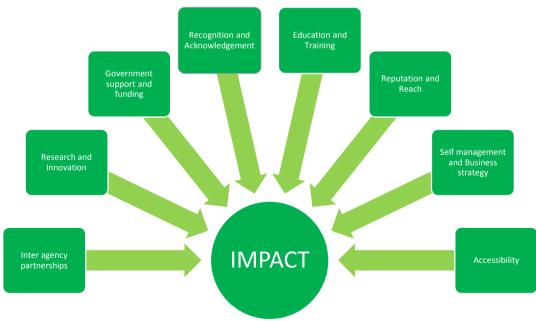


Fig 5: Common themes identified in successful intervention models

Recommendations

- The health of farmers in Ireland must be prioritised as they play a vital role in the economy, contributing to 2.5% of GDP in 2013 (Central Statistics Office, 2013.) Funding for initiatives and interventions to achieve this should be assigned accordingly and a national body should be established to oversee same.
- A percentage of Pillar II funding should be assigned to address the growing educational and health and wellbeing needs of Irish farmers, in line with the CAP and the EU's rural development policy aiming to support rural areas to meet current economic, environmental and societal challenges.
- Specific health and wellness education and promotion initiatives should be instigated within
 this population, along with identification of further research needs and requirements. This
 would be in line with the strategic aims and objectives of the Farm Safety Action Plan 201618, People in Dairy Action Plan, Foodwise 2025 and Horizon 2030 reports to improve the
 health of Irish farmers. This also aligns with the aims of Healthy Ireland, the national
 framework for action to improve the health and well-being of people living in Ireland.
- There is a need for the development of an objective tool to measure impact and outcomes of initiatives on farmer health and practice.
- Incorporate significant Health Literacy and Self-Management modules into all existing educational structures and curriculum within agriculture to enable culture and practice change.
- A framework for formalised Continuing Professional Development should be considered and implemented, again with a focus on self-management and health promotion central to same.
- Adoption of best practice in the area of Health and Wellbeing, Education and Farmer Sustainability should be recognised by Government Departments and Industry, with potential for monitoring of same through schemes such as An Bord Bia Audits.
- Farmers demonstrating best practice in the area of Health and Wellness should be championed through a national campaign and awards similar to that of other farming initiatives.
- A national steering group or alliance, comprised of strategic partners and stakeholder representatives, and a national research collaboration between academic institutions and farming organisations, should be established to adopt a blended research and practical application focused approach to improving farmer health and wellbeing nationally.
- A Steering Group should be established to examine the need for a National Farmer Health Centre, co-funded by the Department of Health, DAFM and industry, to meet the specific physical and mental health needs of farmers.

Afterword: Nuffield and Beyond ...



Nuffield is about getting involved, pushing yourself, or allowing others to push you, outside of your comfort zone and in turn developing leadership skills to be able to contribute positively to the agriculture industry and local communities. All while getting to experience agriculture and interact with the Nuffield Scholar network internationally. It has allowed the opportunity to develop alternative perspectives and a greater sense of objectivity, both of which have positively impacted our farming business at home and my physiotherapy enterprise also.

The Author visiting the Australian Consulate General in Surabaya, Indonesia on the Global Focus Program.

Nuffield has given me the opportunity to research this topic further and provided the optimal platform for the dissemination of what I hope is useful information and recommendations that will positively impact on Irish farming. It also provided opportunities to work alongside leading researchers in Ireland and become involved in establishing a research and farmer health alliance. As a result of this report I was asked to sit on the Oversight Advisory Committee for the Engage Project in conjunction with the Men's Health Development Network. This involves working with a highly motivated, successful and informed group of individuals working within the Health, Research and Agriculture sectors, all with the single mission of advocating for and improving the health status of Irish farmers.

Watch this space.....

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