

**An Investigation of the Farm Development Pathways and Entrepreneurial Activities
Employed by Irish Farm Operators Following the Acquisition of Disability**

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Abstract

Internationally, farm families employ development strategies to maintain or enhance living standards following disability, often requiring assistance from agricultural extension services. The aim of this article is to identify the development pathways employed by Irish farm families following farm operator disability in addition to identifying their service/support requirements. A developed questionnaire was circulated to a self-reporting sample of farm operators reporting disability in addition to a comprehensive literature review undertaken. Results indicate that almost one in five Irish farm families report disability, primarily among farm operators and typically physical in nature. Disability is a major issue among farm households, with reliance on the traditional model of farming, despite its economic problems. Legislative and financial constraints often prevent intensification of production. Spouse participation in off-farm employment was the predominant income diversification strategy. One in five farm families experienced an erosion of their income base with the disengagement of off-farm employment among farm operators following disability, placing additional pressure the farm business to provide an adequate standard of living. Financial assistance in addition to advice/information were primary service/support requirements among farm operators, with the current provision of services/supports perceived largely insufficient. The results generated in this research raise awareness of issues among farm households reporting disability, and suggest that Agricultural Educators give consideration to designing holistic cooperative programmes that minimise the impact of disability among farm households.

Key words: entrepreneurial activities, disability, farm business development

Introduction

Internationally, the entrepreneurial talent of farm families are continually being tested as owned resources (land, labour, capital) are re-orientated within increased agricultural and environmental legislation, the progressive withdrawal of state subsidies, and increased market competition from international trade (Bowler, Clark, Crockett, Ilberry, & Shaw, 1996). All farm families experience these external pressures, but when coupled with internal pressures such as the acquisition of disability to a family member, the sustainability of existing farm developmental strategies can be questioned (Whelan, Ruane, McNamara, & Kinsella, 2007). Roles, habits and routines can all be significantly altered following disability (Molyneaux-Smith, Townsend, & Guernsey, 2003). In times of crisis, farm businesses typically diverge into one, or a combination of developmental pathways (Bowler, 1992). These farm business developmental pathways typically involve; 1) extension of the industrial model of farm business development based on scale enlargement, intensification and specialisation using traditional products or services; 2) restructuring farm resources (including human capital) into new non-conventional agricultural products or services; 3) restructuring farm resources (including human capital) into non-agricultural products or services; 4) redeployment of human capital into off-farm employment; 5) maintenance of traditional farm production and services; 6) winding down to hobby or semi-retired farming; or 7) retirement from farming (Bowler et al., 1996). The farm developmental pathway undertaken by farm families is influenced by both internal and external constraints (Bowler et al., 1996) namely technical, financial, human, social and institutional resources. In order to be successful, the modern farmer needs to respond both swiftly and accurately to changes in the immediate and global environments (Nell & Napier, 2005). Access to quality information in times of risk, such as that provided from extension services who have traditionally been seen as a source of help and assistance leading to good decisions and development (Leewis, 2004), becomes of ascending importance where perceived risk increases (Sligo & Massey, 2007).

The agricultural sector in Ireland reports the highest level of people with disabilities relative to any other (Central Statistics Office (CSO), 2002), yet no professional advice to address specific needs of farmers with reduced work capacity is available (Finnegan, Ruane, & Phelan, 2005). Consequently, a collaborative study between the Irish agricultural extension service and University College Dublin was conceived to identify the pathways of farm business development and entrepreneurial activities engaged by farm operators following the acquisition of disability. In addition, the service/support requirements of farm operators were also identified.

Purpose

The purpose of this paper is (a) to review current literature pertaining to disability among Irish farm families; (b) identify the farm developmental pathways and entrepreneurial activities engaged on farms following the acquisition of disability to the principal farm operator, and (c) identify the service/support requirements of farm operators experiencing disability. The definition of disability used for this paper was amended from the 2005 Disability Act of the Oireachtas (Irish Parliamentary system), and includes:

Disability, in relation to a person, means a substantial restriction in the capacity of the person to carry on a profession, business or occupation or to participate in social or cultural life by reason of an enduring physical, sensory, mental health or intellectual impairment (Disability Act, 2005, p6).

Methods and Data Sources

A comprehensive literature review was conducted using peer reviewed journals and international databases. A research questionnaire to identify the farm developmental pathways and entrepreneurial activities employed by farm families following farm operator disability was developed using the International Classification of Functioning, Disability and Health framework (WHO, 2002). The questionnaire, encapsulating sections relating to demography, disability, farm business, and service/support requirements, was validated and subsequently mailed to a self-reporting sample (n=143) of farm operators reporting disability. Liaison officers (agricultural consultants/advisors/organisations, disability organisations etc), in addition to various national and local media were used to create awareness of the study. Ethical approval was obtained from University College Dublin Human Research Ethics Committee prior to commencement. A questionnaire response rate of 66% was obtained, with responses coded, validated and entered into SPSS (Statistical Packages for Social Sciences) for analysis purposes.

Results

Disability Among Irish Farm Families

Irish agriculture is hugely diverse, with farm businesses possessing unique operational traits (scale, enterprise, mechanisation etc.) in addition to regional and demographic characteristics (McNamara & Reidy, 1992). The sector has undergone significant consolidation in recent years (Finnegan, 2007), with the number of farms declining by 17% between 1991 and 2000 (Crowley, Meredith & Walsh, 2004). Despite the declining participation rate, the agricultural sector remains an important indigenous industry, contributing approximately 9% of Gross National Product, in addition to offering employment to approximately 240,000 individuals (Scully, 2007). Beef production remains the primary enterprise among Irish farms, followed by dairy, mixed grazing, and sheep production respectively (Census of Population, 2000).

In 2001, Teagasc, the Irish Agricultural and Food Development Authority, appended a supplementary disability survey to their bi-annual National Farm Survey to identify the incidence and impact of disability among Irish farm families. Results from the survey indicated that almost one in five (19.5%) Irish farm households reported disability, corresponding to an estimated 23,332 farms in 2001. The principal farm operator reported the highest incidence of disability among the family unit (39.5%), with the incidence of disability found to be more prevalent among older farm family members (McNamara et al., 2007).

Disability among Irish farm families was found predominantly to be physical in nature (80.1%), largely resulting from ill-health or following physical injury (Table 1). McNamara & Reidy (1997) reported that almost 75% of disability among farm operators was due to ill-health. The highest incidence of non-physical disability was found among children with learning and intellectual disabilities. Arthritis and cardiovascular problems were the primary health-related disabilities among farm operators, while further analysis of injury related disability identified that 70% of the incidence occurred from farm work, with the remaining 30% from non-agricultural causes (McNamara et al., 2007). Non-fatal agricultural accidents have been shown to fluctuate greatly in recent years, ranging from 12.6 per 1,000 workers in 2003, 17.5 per 1,000 in 2004, to 16.5 per 1,000 in 2005 (HSA, 2007). The Irish agricultural extension service, in partnership with other key stakeholders, have put considerable resources into minimising agricultural accidents in recent years, with farm fatalities shown to have reduced by 39% in 2007 relative to 2005 and 2006 (HSA, 2007).

Table 1

Distribution of Disability among Farm Household Members by Cause and Nature of Disability in (%), Irish Farm Families, 2001

	Farm Operator	Spouse	Children	Parent(s)	Other members	All Household Members
<u>Physical</u>						
From Injury	25.9	13.2	4.7	6.6	2.8	14.3
From Birth	5.6	6.8	16.8	1.7	---	6.8
Health Related	49.4	61.5	18.7	49.3	42.9	43.8
Sensory Impairment	5.3	2.3	5.6	14	---	6.7
Other Physical	4.9	---	---	25.9	9.1	8.5
<i>Sub-Total</i>	91.1	83.8	45.8	97.5	55.8	80.1
<u>Non-Physical:</u>						
Learning/Intellectual	4	7.8	42.6	1.8	19	12.9
Mental Health	4.9	8.4	11.6	0.7	25.2	7
<i>Sub-Total</i>	8.9	16.2	54.2	2.5	44.2	19.9
Total	100	100	100	100	100	100

(McNamara et al., 2007)

Disability was reported across all the main systems of farming, with similar farming distribution patterns among farm families reporting disability observed as for all farms nationally. However, on foot of further analysis, a higher proportion (59.8%) of farm families reporting farm operator disability have cattle rearing/cattle other as their predominant farm enterprise relative to the all farms nationally (52.1%). In addition there are proportionately fewer specialist dairy and sheep specialist farm operators reporting disability relative to all farms nationally, with proportionately more in tillage farming (McNamara et al., 2007).

The financial performance of the farm business in addition to participation in off-farm employment was found to vary depending on the individual family member reporting disability. Farm households reporting disability indicated similar, if not more favourable business parameters relative to all farms nationally, provided the family member reporting disability is that other than the farm operator. In addition, these farm families typically indicated higher participation in off-farm employment. However where attention is directed solely toward farm families where the farm operator reports disability, these families were found to experience lower family farm incomes (€24/ha), report higher dependency (+19%) on direct payments (subsidies), and less likely to be involved in off-farm employment (13.7% vs 34.6% farm operators not reporting disability). Table 2 illustrates the business parameters among family farms reporting disability and among family farms not reporting disability.

Table 2

Business Parameters on Farms Reporting Disability and on Farms not Reporting Disability in 2001, Republic of Ireland

	Farm operator with disability	Other member with disability	Farms where disability was not reported
Family farm income (FFI) (€)	13,733	16,571	16,162
Size of farm (ha)	31.7	33.6	35.3
FFI per ha (€)	433.7	493.9	457.8
Direct Payments (DP) (€)	10,978	9,492	9,928
DP as % of FFI	80	57	61
Total farm GM (€)	26,148	31,499	31,383

(McNamara et al., 2007)

Almost three quarters (75.3%) of Irish farm families believed disability had at least some impact on the farm business, with the remaining 24.7% indicating disability had little or no impact on the farm business. The implications of disability were found to be more pronounced among farm households reporting farm operator disability, where 27.8%, 66.1% and 6.1% reported a major, some, or little/no impact on the farm business respectively. Family farm income was 31.5% (€5,098) lower on farms where the impact of disability was “major” compared to non-disability farms or 24.9% (€3,678) lower when compared against farms where disability had “some impact” on the farm business (Table 3).

Table 3

Business Parameters for Farms by Reported Impact of Household Disability and for Farms not Reporting Disability in 2001, Republic of Ireland

Parameters	“Major”	“Some”	“Little or no”	No Disability
Family Farm Income (FFI) (€)	11,064	14,742	20,456	16,162
Ha Adjusted	29.2	31.6	38.6	35.3
FFI/ha	378.6	467	530	457.8
Direct Payments (DP) (€)	7,505	10,698	11,418	9,928
DP as % of FFI	68	73	56	61
Total farm Gross Margin (GM) (€)	20,284	28,532	38,652	31,383

(McNamara et al., 2007)

Farm Business Development Pathways and Entrepreneurial Activities Engaged by Farm Operators Following Disability

Bowler (1992) postulated that the farm business developmental pathways under which farm businesses typically diverge, could be further grouped into three broad strategies. Pathways one and two could be coupled under a common strategy of maintaining a full-time, profitable food production basis for the farm business. He suggested that pathways three and four could be coupled under the ageis of diversifying the farm business income base by restructuring resources into non-agricultural enterprises, while the remaining farm development pathways (five and six) were perceived to indicate the marginalisation of the farm as a profitable business.

Results indicate that the principal strategy adopted by farms following farm operator disability (58.9%) was in relation to the marginalisation of the farm business, with the predominant development pathway being the maintenance of traditional farm production and services. Two percent of farm operators reporting disability were involved in maintaining a full-time, profitable food production basis for the farm business, solely due to engagement in non-conventional agricultural alternative farm enterprises, while almost 40% of farms had diversified their income base following disability. Some 5.3% of farm operators reporting disability employed more than one strategy, namely engagement in both off-farm employment and alternative farm enterprises.

Industrial farms. The industrial farm development pathway was not undertaken by any farm operator reporting disability, using Bowler's farm development pathways criterion as reported in Cawley, Gillmor, Leavy & McDonagh (1995). To be included within this category, farm operators must have made at least three modifications to their farm business, largely surrounding scale enlargement (purchase of land, intensified production, purchase of milk quota), increased farm specialisation (including ceasing non-profitable farm enterprises) or altered farm produce marketing strategies. Just one percent of farm operators reported land purchase following disability, while 5.3% of farm operators reported increasing flock numbers following disability. The principal industrial developmental component undertaken by farm operators was in relation to specialised production. One in five farm operators (20%) decided to specialise in one farm enterprise following disability, primarily specialising in drystock beef production (Figure 1). These findings mirror that of the 2001 NFS where farm operators reporting disability were less likely to be dairy and sheep specialists.

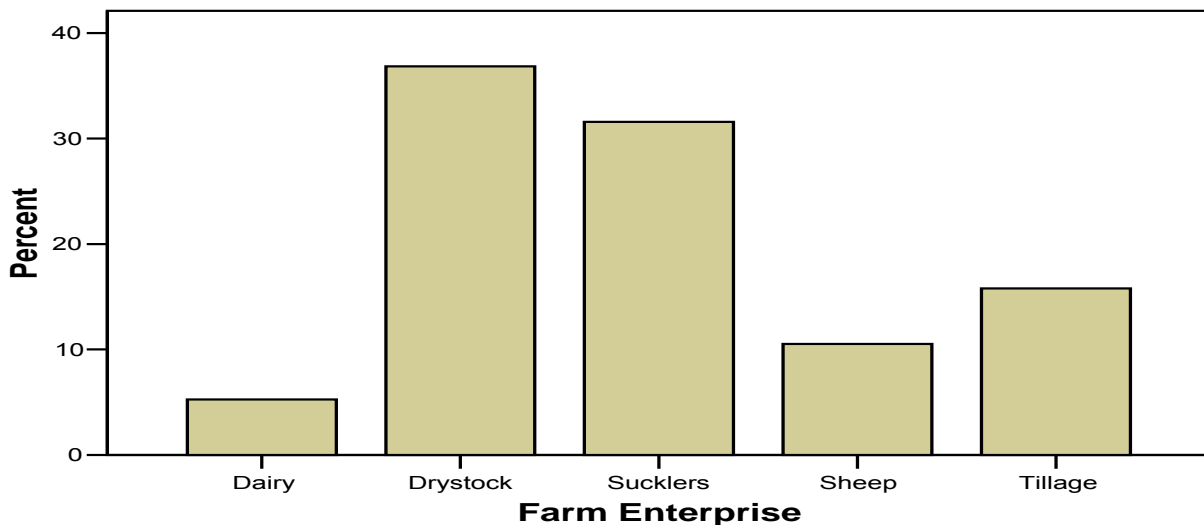


Figure 1. Primary enterprise type among specialist farm operators reporting disability ($n=19$).

Alternative farm enterprise farms. While almost one in four (26.3%) farm operators reporting disability indicated that they were currently engaged in an alternative farm enterprise, only 8.4% of farm operators employed this farm developmental pathway following disability. The primary enterprise type engaged by all farm operators reporting disability was non-conventional agricultural enterprises (Figure 2), however non-agricultural alternative enterprises were the predominant type made following disability. Farm forestry (57.1%) was the most

frequently reported AFE among all farm operators reporting disability, while self-catering accommodation (10.7%) and biofuel/wind energy (7.1%) were also commonly reported. The primary reason to engage in an alternative farm enterprise following disability was predominantly to subsidise declining farm incomes. Indeed almost two thirds (66.3%) of farm operators reported a decline in farm income following disability, due largely to the farm operators inability to carry out certain essential farm tasks (43.2%) in addition to reduced operations on the farm business (33.7%).

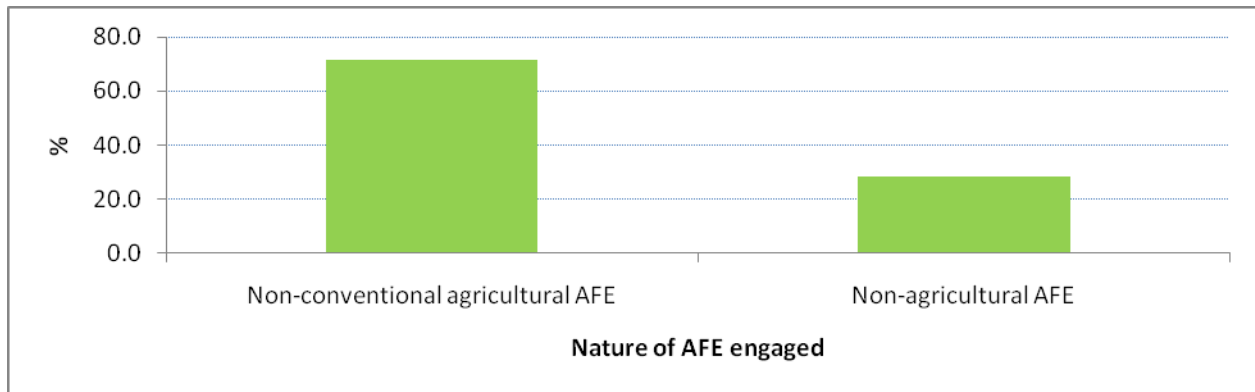


Figure 2. Distribution of alternative farm enterprises (AFE) engaged by farm operators reporting disability by AFE type (n=28).

Off-farm employment farms. In Ireland, participation in off-farm employment has become a common strategy among farm families to subsidise declining farm incomes. In 2002, an estimated 48% of Irish farms had a farm operator and/or spouse engaged in off-farm employment. The proportion subsequently rose to 50% in 2003, while in 2004, 2005, and 2006 an estimated 52%, 55% and 58% respectively were engaged in off-farm employment. On 42% of farms engaged in off-farm employment in 2006, the principal farm operator was found to have held the off-farm employment (Connolly, Kinsella, Quinlan & Moran, 2007). However, among farm families reporting farm operator disability, results from our questionnaire indicate that almost 40% of farm families reporting farm operator disability had a farm operator and/or spouse engaged in off-farm employment. Further analysis revealed that the lower participation relative to the 2006 NFS is due largely to lower farm operator participation (9.5%), as the spouse of the farm operator reported a higher participation in OFE relative to NFS figures (Figure 3).

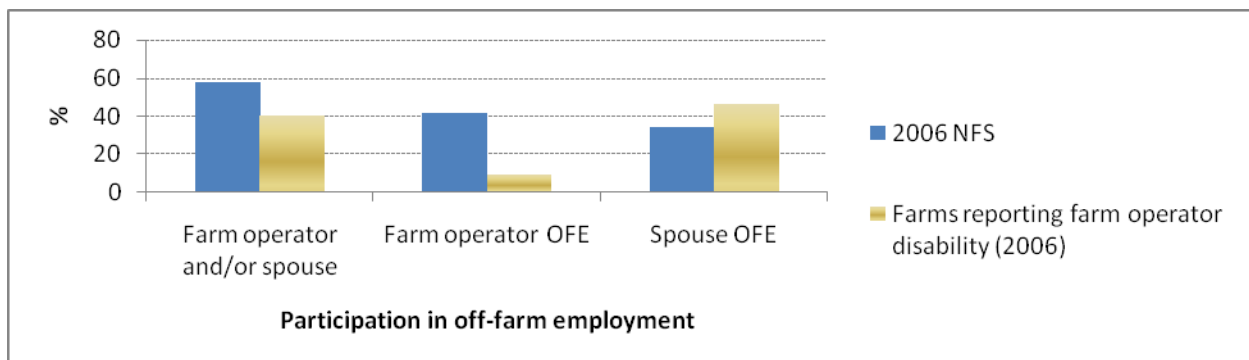


Figure 3. Distribution of farm operator and spouse participation in OFE among farm households reporting farm operator disability and Teagasc National Farm Survey for year 2006.

Five percent of farm operators reporting disability employed this farm developmental pathway following the acquisition of disability. These farm operators were typically employed within the agricultural and services sector. However, further analysis indicated that engagement in off-farm employment is often a non-viable farm development strategy among farm operators following disability as almost one in five farm operators (22.1%) ceased off-farm employment following disability as they believed they were subsequently unable to conduct the tasks involved in off-farm employment following disability.

Winding down farms. Almost one in ten (8.4%) farm operators reporting disability were categorised within winding down farms. Winding down farms encapsulate farm operators aged over 50 years with no successor on the farm, and reporting at least two reduced farm activities. Indicators of reduced activity typically involve ceasing farm enterprises, sale/lease of land/buildings, leasing more farm land than is actually farmed in addition to plans of retirement. The overarching criterion for inclusion among winding down farms excluded many farm operators who would traditionally be deemed within this category. One in five (20.7%) farm operators did not see themselves farming in five years time, while a further 31% were unsure if they would be farming, depending largely on their health status. Plans for retirement, in addition to cessation of farming enterprises were the two dominant traits among farm operators on winding down farms. The single most frequent modification made by farm operators following disability was in relation to operational changes such as ceasing a farm enterprise, rather than structural modification to farm buildings, facilities or machinery. Exiting labour intensive enterprises such as dairy and sheep were most frequently reported.

Traditional farms. Traditional farms involve farm businesses that were not classified into industrial, AFE, OFE, or winding farms. Over half (50.5%) of farm operators reporting disability were employing this farm developmental pathway. These farm businesses typically do not re-orientate farm resources with objectives of maintaining a full-time, profitable food production basis for the farm business or diversifying the income base of the farm business. They are static farm businesses, not progressive in expanding or developing the current farm business through internal or external sources. Resource constraints, both human and financial may be underlying factors why family farms remain within this category, as may external factors such as the availability of quality services/supports.

Service/Support Requirements Among Farm Operators Reporting Disability

McNamara, Ruane, Connolly, Reidy & Good (2003) reported that almost 75% of Irish farm families reporting disability did not avail of any State or voluntary services. Among farm families where the farm operator reported disability, less than one in ten (7.5%) availed of any State or voluntary services. Results from our circulated questionnaire indicate that farm operators reporting disability perceive insufficient services/supports are being provided across the entire service/support spectrum from when the farm operator first reports disability through to retirement (Figure 4).

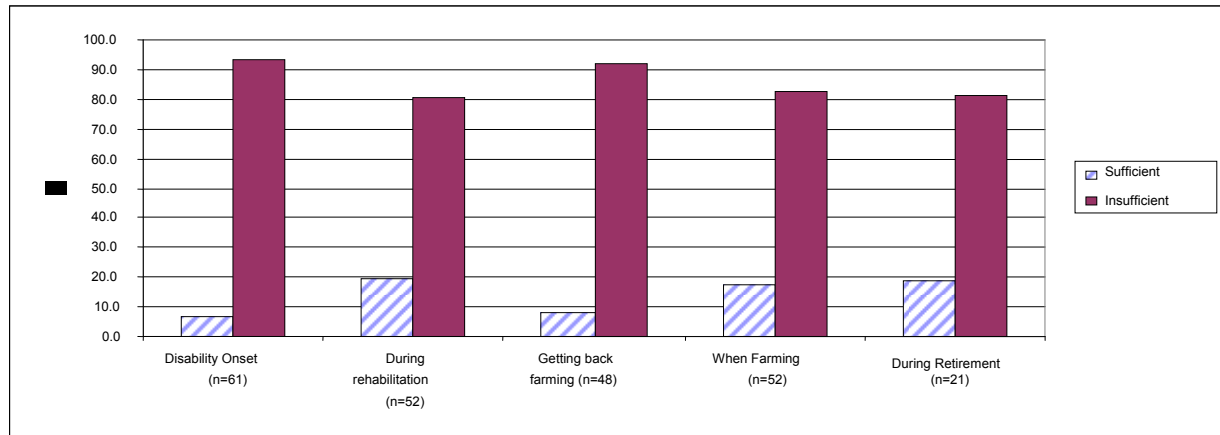


Figure 4. Perceived sufficiency of services/supports provided to farm operators reporting disability.

Among respondents that expressed their views in relation to the sufficiency of services/supports for farm families reporting disability, 93.4% indicated insufficient services/supports when disability was first acquired. Almost four in five (80.8%) indicated insufficient rehabilitation services/supports, while 91.7% and 82.7% of farm operators perceived insufficient services/supports were being provided to the farm operator returning or remaining in farming respectively. Members of the farm family were perceived as being the primary source of service/support to farm operators as they attempt to return or remain in farming, while friends and neighbours were the primary source of support outside the family unit. Almost four in five (81%) of farm operators perceived insufficient service/supports were being provided to farm operators during retirement.

The perceived insufficiency of services/supports provision often resulted in frustration among farm families, with family farm members forced into making considerable personal sacrifices to keep the family farm business operational. One farm operators reporting disability expressed his frustration in relation to the provision of services/supports when he stated;

“I spent 10 months in hospital in Dublin. My son gave up his job to look after the farm as my wife spent a lot of time with me. He had to return to work as I could no longer afford to pay him the minimum wage to meet his own commitments. I feel that farmers in my position get no assistance from any organisation. We are left muddle away as best we can.”

Financial support was the primary service/support requirement among farm operators with acquired disability, while support groups, advice on farm business modifications, subsidised farm labour in addition to information in relation to available services/supports were also requested. Farm operators reporting disability believed agricultural extension services, in addition to agricultural State departments had a major role in the delivery of such services.

Conclusions

This article provides agricultural education and extension professionals with knowledge on occupational disability among the farming community, identifying the farm business developmental pathways employed following farm operator disability. Almost one in five Irish farm families report disability, predominantly experienced by the principal farm operator. Ill-

health and injury-related disability were the predominant cause of disability. Attending to matters of health and safety, together with disability are important issues to address for farm operators, farm households, extension faculty and other professionals. Results indicate that disability is a major issue among farm households, with reliance on the traditional model of farming, despite its economic problems. The legislative environment in addition to financial pressures may prevent the intensification of production, with engagement in alternative farm enterprises and off-farm employment the only viable solutions for sustainability. However, spouse participation in off-farm employment was found to be the predominant income diversification strategy, as almost one in five farm families experienced an erosion of their income base with the disengagement of off-farm employment among farm operators following disability. This can serve to further precipitate a declining family farm income in addition to placing additional pressure the farm business to provide an adequate standard of living. Farm operators reporting disability require financial assistance and advice/information in relation to farm business modifications. The current provision of services/supports to farm operators reporting disability is insufficient, with considerable frustration experienced among farm families.

Educational Importance

Going forward, in current environs, farms will have to increase in scale and efficiency or farm family members will have to diversify their income base to maintain household viability. The acquisition of disability can place additional pressures (financial, relationship, psychological etc) on the farm family and the farm business. Almost one in three farm operators were unsure if they would be farming in five years time, depending largely on their health status. This population is pivoting on agricultural existence or extinction. Assistance from extension officers who traditionally have been providing solutions to problems encountered by farm families may tip the balance toward a favourable outcome. It is imperative the extension officer recognise that the farm operators reporting disability are primarily farmers, wishing to remain in production agriculture. A “one cap fits all” solution will not result in success. An integrated holistic service, involving key stakeholders (agricultural extension officers, health professionals and community-based specialists) operating in partnership with the farm family needs to be provided. All information, training and advice needs must be available and co-ordinated when required. The development of such a service will have educational and training implications for agri-professionals, extension educators, health service providers and university faculty. Failure to provide such a service can ultimately jeopardise the viability and quality of life of farm families reporting disability.

References

- Bowler, I., Clark, G., Crockett, A., Ilbery, B., & Shaw, A. (1996). The development of Alternative Farm Enterprises: A study of family Labour Farms in the Northern Pennines of England. *Journal of Rural Studies* 12 (3); 285-295
- Bowler, I.R. (1992). Sustainable agriculture” as an alternative path of farm business development. In I.R. Bowler, C. R. Bryant & M. D. Nellis (Eds.), *Rural Systems in Transition: Agriculture and Environment*, pp237-253. CAB International, Wallingford.
- Cawley, M., Gillmor, D., Leavy, A. & McDonagh, P. (1995). *Farm Diversification: Studies Relating to the West of Ireland*. Teagasc, Dublin.
- Census of Agriculture. (2000). Central Statistics Office, Dublin. Retrieved 14/03/07 from: http://www.cso.ie/releasespublications/pr_agrifishpubshardcopies.htm

- Connolly, L., Kinsella, A., Quinlan, G., & Moran, B. (2007). *National Farm Survey – 2006*. Teagasc, Dublin
- CSO - Central Statistics Office. (2002). *Census of Population of Ireland – Volume 10: Disability and Carers*. Central Statistics Office, Dublin. Retrieved 16/03/07 from: http://www.cso.ie/census/documents/vol10_entire.pdf
- Crowley, C. Meredith, D., & Walsh, J. (2004). *Population and Agricultural Change in Rural Ireland, 1991-2002*. Teagasc. Received 14/03/07 from <http://www.teagasc.ie/publications/2004/2004030/paper03.html>
- Disability Act (2005). As Enacted, Government of Ireland. Stationary Office, Dublin. Retrieved 14/03/07 from: <http://www.oireachtas.ie/documents/bills28/acts/2005/a1405.pdf>
- Finnegan, A. (2007). *An examination of the status of sealth and safety on Irish farms*. Doctoral dissertation, School of Biology and Environmental Sciences, University College Dublin. 232pp.
- Finnegan, A., Ruane, D., & Phelan, J. (2005). *A Study of the impact of farmer disability on farm households – Case studies from the Republic of Ireland*. Paper presented at the 17th European Seminar on Extension Education. Turkey, August 30th – September 3rd.
- Health and Safety Authority (HSA) (2007). Injury Statistics. Retrieved 19/12/07 from <http://www.hsa.ie/eng/Statistics>
- Leeuwis, C. (2004) *Communication for rural innovation – Rethinking agricultural extension* (3rd ed). Blackwell Publishing, 412pp
- McNamara, J. & Reidy, K. (1992). Survey of farm safety and health on Irish farms. Teagasc Publication, Dublin. 75pp.
- McNamara, J. & Reidy, K. (1997). *Survey for farm safety and health on Irish farms*. Teagasc, Health and Safety Authority Publication, 61pp.
- McNamara, J., Ruane, D., Connolly, L., Reidy, K., & Good, A. (2003). A study of the impact of disability in farm households on the farm business in Ireland. *Proceedings of the 19th Annual conference of the Association for International Agricultural and Extension Education*. Raleigh, North Carolina, USA. April 8-12th. Retrieved 06/08/06 from: <http://www.aiaee.org/2003/McNamara425-436.pdf>
- McNamara, J., Ruane, D., Whelan, S., & Connolly, L. (2007) A preliminary investigation of the incidence and impact of disability on Irish farms. *Journal of International Agricultural and Extension Education* 14 (2); 21-34
- Molyneaux-Smith, L., Townsend, E., & Guernsey, J.R. (2003). Occupation disrupted: Impacts, challenges, and coping strategies for farmers with disabilities”. *Journal of Occupational Science*. 10 (1), 14-20.
- Nell, W.T. & Napier, R.J. (2005). *Strategic approach to farming success*. Paper presented at the 15th International Farm Management Association Congress, Campinas, Brazil. 14-19 August.
- Scully, G. (2007). Presented at Teagasc National Rural Development Conference - Towards Sustainable Rural Livelihoods, Mullingar, Ireland, 1st February.
- Sligo, F.X. & Massey, C. (2007). Risk, trust and knowledge networks in farmers learning. *Journal of Rural Studies* 23; 170-182
- WHO – World Health Organisation. (2002). Towards a Common Language for Functioning, Disability and Health – ICF. WHO, Geneva, Switzerland

Whelan, S., Ruane, D., McNamara, J., & Kinsella, A. (2007). *Review of quality of life influential factors among Irish farm families reporting disability*. Paper presented at the 16th International Farm Management Association Congress, Cork, July 15-20, pp. 239-246.