

**85th Annual Conference of the Agricultural Economics Society  
Warwick University**

**18 - 20 April 2011**

**Where has all the cream gone: How sustainable is the English dairy supply chain?**

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**Abstract**

The sustainability of the dairy supply chain is a widely debated topic in the industry. The purpose of this paper is to explore farmer behaviour in response to diminishing returns and investigates the possible long-term implications of low returns, identified by farming families. The paper argues that, sustained declines in margins, coupled with other structural changes in the industry, will eventually lead to an exodus of small family farms. A qualitative methodology ensures in-depth data were collected over a five year period. The results indicate that farmers and their families are concerned over the reduced margins for their produce, with many smaller farms forced to subsidise the business with alternative sources of income. Farmers also raise concerns over the sustainability of the dairy supply chain and how future English milk supplies will meet the demand.

**Keywords and [JEL codes](#) (if available)** supply chain, sustainability, family farming, behaviour. D400, J300, L110, M100, Q120.

Where has all the cream gone: How sustainable is the English dairy supply chain?

## **1. Introduction**

The pressures on farmers today are perhaps greater than they have ever been. Small scale farmers are put at a disadvantage by the power of large organisations (whether retailers or equipment suppliers). Over the years, farmers have had to adapt to economic, social and political changes. The last decade has seen fundamental changes in economic and legislative influences on farm businesses. The disruption of long established trading patterns through BSE, FMD, and animal rights campaigns (for instance, opposition to live exports: Lobley *et al.*, 2002), alongside increasing input costs and falling commodity prices, has affected the economic and social make-up of farming.

Previous work on food prices have focused on household expenditure on food (Stewart and Blisard, 2008), understanding high food prices (Gilbert, 2010), financial implications of changes in subsidy payments (Daniel and Kilkenny, 2009), and the effects of financial incentives for environmental schemes, the reluctance of farmers to participate, effects on supply (Espinosa-Goded *et al.*, 2010) and the subsequent forgone agricultural income (Fraser, 2009). In the context of milk, work has explored the effects of milk quotas (Hennessy *et al.*, 2009), but the impact of all these factors on farmers behaviour has not been fully explored in economic terms, nor investigated across the entire supply chain from the farmers' perspective. The paper also analyses industry data and farmer narratives.

This paper addresses this gap by exploring the sustainability of the current dairy supply chain in England. The paper draws on industry data to set the scene for exploring farmer behaviour in response to diminishing returns. The work investigates the distribution of profits across the supply chain and questions the sustainability of the current strategies pursued by dominant players in the market place.

## **2. Profit seeking**

In Western societies, the pursuit of economic capital is the dominant principle (Vandenberghe, 1998). In economic thought, the term capital originally meant: an accumulated sum of money, which could be invested in the hope of future profits (Field, 2003, p. 12). As Fligstein (2001) implies: it is evident that economic theory begins with the idea that individuals are profit maximisers (p. 13), based on the premise that social institutions would not persist if they were not economically efficient.

Economic theory acknowledges the rational responses of an individual to potential opportunities or, more precisely, to average chances (like the rates of profit offered by different markets). The Theory of the Firm postulates that rational economic man has the single objective of profit maximisation, and is always able to select the most appropriate means to attain this goal. He does this by using all the relevant information available to make a rational choice, therefore: economic information is a function of one's power over the economy (Bourdieu, 1990, p. 64) and some people will have access to a greater volume of more valuable information than others. Thus, some scholars argue that economic man is a perfect type, useful for purposes of argument, but not encountered in real life (Chell, 2001; Gasson and Errington, 1993). In essence: the real world is so complex that the notion of perfect rationality must also be abandoned (Gasson and Errington, 1993, p. 89).

The perception among many mainstream agricultural economists and farm management specialists is that farming trails behind other industries, being the last to apply modern business management practices and needing to catch up with other, more enlightened, sectors (Gasson and Errington, 1993). Under economic theory, success is defined by profit maximisation, but the small business owner may define success through survival and independence rather than growth (Curran, 1999). Failure to grow may stem not from a lack of motivation, but from the variety of constraints faced by SMEs (Durrani and Boocock, 2006). The principal internal constraints are a lack of resources, including limited capital and fewer sources of information, and pressures on the owner-manager's time (Buckley, 1989; Marlow, 1998).

### **3. Business and farmer behaviour**

In studying business behaviour it is the objectives of individual that are relevant. In economic theory, the relevant individual is the entrepreneur, defined as someone who specialises in taking judgmental decisions about the co-ordination of scarce resources (Casson, 1982).

Farmers cannot be expected to act rationally in a world where outcomes cannot be predicted with any degree of certainty. In addition, farmers face various resource, price and yield risks, making their production and incomes volatile, season to season, and from one year to another (Hossain *et al.*, 2002). These risks stem from factors beyond farmers' control, such as disease, weather, climate changes, political changes, crime and soil type (Pannell *et al.*, 2000). Moreover, the adoption of modern technology, general economic conditions, price and income elasticity of commodities in local and international markets, and

public and private institutional policies all influence farmers in their decision-making (Barlett, 1980; Grant, 1991; Hossain *et al.*, 2002; Howarth, 1990).

Burton (1998) asserts that: research up until the 1960s focused on the economic models of agricultural behaviour in the mistaken belief that agricultural decision-making was based entirely on the economic rationale (p. 65). Academic work in the field of economics has since been concerned with understanding and modelling the processes and consequences of decision making among farmers. As a result: models of farmers' behaviour have been developed for a variety of specific situations, from assessing the effects of changes in policy to changes in behaviour as a result of the introduction of new technology (Willok *et al.*, 1999, p. 286). These models may fail to account adequately for the behaviour of individual farmers, or may yield highly constrained models of specific behaviours (see: Willok *et al.*, 1999).

The consensus of opinion in the literature now suggests that farmers' behaviour is not driven solely by profit maximisation. Rather, it results from complex processes influenced by a range of socio-economic and psychological variables (e.g. Gasson, 1973; Casebow, 1981; Gilmore, 1986; Gasson and Potter 1988; Willok *et al.*, 1999).

#### **4. The dairy supply chain and business environment**

The dairy industry has seen major changes over the last 35 years. In 1973, there were 87,225 milk producers; by 2002 this had reduced to just 25,548, a reduction of 61%. By 2002, around 2,000 dairy farmers were going out of business every year, an average of 40 per week (Curry *et al.*, 2002). In 2003, there were approximately 23,000 dairy farmers in the UK (DEFRA, 2003), and numbers further declined to 19,011 in 2006 (MDC, 2006). In January 2011 producer numbers for England and Wales stood at 11,005 a fall in numbers of 443 (3.9%) over the last twelve months. In the midlands where the study took place the decline was 5.1% from 1257 to 1193 (DairyCo Datum, 2011). Average herd sizes have increased from 38 to 85 cows (an increase of 123%) over the 30-year period from 1973-2002 (Falkinham, 2004). The average now stands at around 100 cows (DairyCo Datum, 2011). Milk yield per cow also increased by 200 litres per cow, per year (Colman *et al.*, 2004), although the number of cows has decreased by 136,000 (source: DEFRA statistics 2003). The UK saw record low levels of milk production in 2009/10, affecting all dairy products, this can be attributed to rising grain costs and also seen in global reductions on supply, milk exporting countries such as New Zealand are crucially dependent on the weather and severe

drought in 2010 and flooding in Australia is leading to further escalation of world and EU market prices (DairyCo Datum, 2010a).

The consolidation present across the supply chain in agricultural markets today, suggests that capitalism still operates largely along the lines described by Weber in the 1930s. For instance, three companies control 95% of the agricultural fertiliser market, four control 77% of agro-machinery market and three control 90% of the UK frozen food market (Ward, 1990) and still holds true today. In the retail sector, four supermarkets control 75.4% of the market; Tesco has 25.8% of that figure, with sales equivalent to £63,900 a minute (Farmerslink, 2004), with: over 95% of people do their main shopping at supermarkets and do not know where food originates from (Curry *et al.*, 2002, p. 16). The factors above have contributed to the financial crisis facing farmers, a crisis exacerbated by other organisations gaining power and increasing their capital share. As a result: in such circumstances, the global manufacturers of farm inputs have the power to extract wealth from local farms, with predictably negative results for local economies, as well as reduced food security for the nation as a whole (Saskatonn, 2003, p. 21). Farmers also suffer from the actions of official bodies and buyers. For instance, the imposition of numerous rules and regulations has led to the standardisation of food production, compliance with costly standards without a price premium (Tallontire and Vorley, 2005) resulting in social marginalisation of farmers and their families, with the loss of rural identity, bio- diversity, and landscape.

The instability of agricultural markets means that reaching an equilibrium of supply and demand is problematic because of the time lapses between the decision to produce, and availability of the product on the market. This forces farmers to continue with production, irrespective of market conditions (Howarth, 1990). These 'cobweb' cycles form another unique feature of this industry (Grant, 1991). It is not easy to stop and start milk production, for example, at the precise point when milk production becomes financially viable. This inflexibility of output in relation to price changes, and the prevalence of trapped resources, such as buildings and machinery, all add to the financial risk of farming.

Price and income inelasticities associated with basic foods stuffs exacerbate competition in the food chain, promoting higher value-added versions of existing food products (Meades, 2003; Whatmore *et al.*, 1991). In situations where prices are permanently low, and in some cases falling, the only way farmers are able to achieve higher prices is to pursue value-added products. However, adding value to commodity products is not easy and generally involves branding; this has taken over in the food industry (Meades, 2003). Food is sold as a brand, rather than a necessity for survival. This process does not benefit farmers,

unless they own the brand name rights. Profits are thus moved from producer to brand-owner.

Milk production is highly labour-intensive, with high fixed costs of production and transport. The sector has the highest degree of protection, owing to the economically vulnerable position of small milk producers. The nature of milk (perishable and bulky) requires strict and comprehensive quality regulation. Dairy farmers are currently facing intense financial pressures, with both margins and profits in decline. In response to the changing economic climate, many milk producers have increased herd size and production whilst reducing overhead costs. However, Dent (2000) suggests that these measures alone are insufficient to ensure the long-term viability of the sector.

Modern food and agricultural technologies make it possible for consumers to enjoy stable inexpensive food (Wimberley *et al.*, 2002), since holding down the price of food is Government policy, it could be legitimately argued that policy makers are responsible for farming's impact on the environment (Wimberley *et al.*, 2002). Verhaegen and Huylenbroeck (2001) highlight another demand problem: consumers want low cost foods yet show increased interest in food quality and safety standards, again increasing financial costs for the producer. Supply chain governance is emerging in the marketplace, many milk buyers demand different requirements of their individual producers. This has led to the emergence of different standards for hygiene and compositional quality, seasonality requirements and transport and collection options. Furthermore, a number of milk buyers who supply retailers on dedicated supply chain contracts are imposing on their suppliers standards for stockmanship, welfare and hygiene in order to meet the supposed aspirations of consumers and to give a competitive marketing edge (Vorley, 2003, p. 59).

Perhaps equally important, agricultural markets have separate production and processing/marketing systems; the latter are dominated by a small number of very large oligopolistic suppliers and food retailers (price-makers) who use their unequal bargaining power to financially squeeze the individual farmer (Fitzgerald, 2003; Grant, 1991; Howarth, 1990). As farmers are price-takers in complex agro-industrial markets, farm production becomes the weakest link in the food chain (KPMG, 2003; Saskatonn, 2003; Whatmore *et al.*, 1991); the outcome has been a decline of the farmer's share of the retail food price (Curry *et al.*, 2002).

Persistent low UK milk prices, between 8 and 13% below the EU average over the period 1998 - 2003, have had a major impact on UK dairy farming and its financial sustainability (MDC, 2003). In 2002/03, the average total cost of milk production was 18.33

pence per litre. The weighted average milk price for the same time frame was 16.89 pence per litre, the lowest since 1987 (Colman *et al.*, 2004, p. viii). Colman and Harvey (2003) argue that: almost 60% of dairy farmers (contributing 40% of UK output) failed to cover full costs (p.2). This is also the case elsewhere; 30% of dairy farmers in Europe do not make any profit per litre, hence a significant number of small scale farmers will eventually cease milk production. The average retail price for liquid milk in multiple retailers remained stable in the 2009/10 year at 65.1ppl (AHAD, 2010). For instance, retailers had a gross margin of 34% on liquid milk in 2009/10, up from 29% in 2008/09 and from 20% ten years ago (AHAD, 2010, p. 3). In 2009/10 processors paid 23.8ppl to farmers and were selling to retailers at 42.7ppl (AHAD, 2010). Supermarkets were selling 4 pints on offers of 2 four pint containers for £2 (equating to 44ppl). Average prices indicate 4 pint selling for 114p twelve months before this was 149. Milk on the door step rose to 62ppl in the last quarter of 2010 (DairyCo Datum, 2010b).

Tesco (nearly 30% market share) and Asda, which together account for nearly half of UK supermarket spending, are squeezing hundreds of millions of pounds from their suppliers every year in permanent price wars to deliver supernormal profits and growth rates to their investors year after year (Tallontire and Vorley, 2005). The Competition Commission 2000 report on UK supermarkets concluded there was evidence that supermarkets were abusing their position of power, engaging in practices that adversely affected the competitiveness of suppliers. To address adverse effects the report recommended a *code of practice* be introduced to govern supermarket-supplier relationships (Tallontire and Vorley, 2005). The code of practice is still being disputed as un-necessary by retailers now in 2011.

Coupled with low prices, there have also been sharp increases in transaction, labour (especially in the UK), and energy costs that have exacerbated the financial pressures on farmers (Van der Ploeg *et al.*, 2000). Increases in machinery costs have resulted in many farmers outsourcing harvesting and other work requiring specialist machinery. High entry costs make it almost impossible for new entrants to start their own farm business, unless they can find a council farm to rent or they inherit their parents' farm.

Farmers are also left to absorb the increases in costs of production, namely labour and feed. They are unable to determine the cost of their produce and are merely price-takers in the pure economic sense, and are also exposed to high levels of risk. The price received is often below the cost of production, driving many farmers out of business (Turner, 2003). However, in 2008 prices for agricultural commodities from wheat to milk surged globally with unprecedented speed, social unrest and hunger have emerge in different parts of the

world (Blas and Wiggins, 2008). But increasing commodity prices have not been translated back to an increase in farm-gate prices for farmers. If farm-gate price had increased in line with inflation and the retail price of milk it would stand at 34.4ppl in 2010 (Dairy market update, 2011).

According to the NFU (2011) cost of milk production report February 2011, there is a 3.16ppl gap between what producers receive for their milk (25.94ppl November 2010) and the cost of production which is calculated at 29.10ppl for the 2010/11 milk year. The report suggests that producers will need 30ppl by May 2011 in order to cover further rises in production costs. The biggest contributors to the increase in production costs are the costs of bedding and notably feed (NFU, 2011).

Agricultural borrowing is at an all time high of £10 billion, and four major clearing banks dominate the UK agricultural credit market; yet farm investment is at a thirty year low (NFU, 2003). Borrowings have mainly been used to cover increasing operational costs rather than investment in capital assets. Declining farm incomes and capital stock, coupled with increasing debt, have substantially reduced profits for UK farmers (Whatmore *et al.*, 1991), and contributed to consolidation in the agricultural (dairy) industry. Farmers need to produce more to service debt levels but this requires increased investment in capital, and hence further debt; these pressures can only be sustained by fewer, larger farms across the developed world (Francis, 1994).

Farm incomes fell by 37% in real terms over the ten-year period, 1988-1998 (Gasson *et al.*, 1998, p. 2). These low incomes are another justification for Government support (Howarth, 1990). However, it can be argued that those with the lowest income do not receive the highest level of support. In the UK, farming has seen a massive slump in income since 1995, and is emerging from its lowest point for 60 years (NFU, 2003) For the year ending June 2001, the average 200 ha UK farm made £2,500 from agriculture (Deloitte and Touch, 2001). Around 36% of farmers had a total income of less than £6,000 and only 4% had a total income of £50,000 or more (DEFRA, 2002). Farmers have been working an average 70-hour week (RASE, 2001) 22 hours more than arable farmers. Dairy farmers on average take only 9 days holiday per year. The effective rate of pay is £2.90 per hour; farmers' incomes have exceeded the national minimum wage only twice in the last seven years (RABDF, 2004). Non-farm activities are increasingly subsidising food production (Farmers Weekly, 2003). UK farming is contracting, demoralised and ageing, in 2002 the National Farmers Union warned of growing problems affecting Britain's farming industry which could



force thousands to leave the land, with low incomes, job losses and poor prices leading to a new crisis in agriculture (Vorley, 2003).

All the factors discussed above indicate that the current market operation of the dairy supply chain is unsustainable to ensure future production and returns needed for re-investment.

## **5. Methodology**

The distinctive need for a case study arises out of the desire to understand complex social phenomena, in this instance family dairy farming. Case study research produces rich understanding of social sites (family, family farm business) and the structure of meanings created by the actors who operate there (MacPherson *et al.*, 2000, Yin, 2003). Each case, ten in total, represents a family dairy farm business located in one county in the UK. Using multiple cases allowed for comparative analysis (Glaser, 1996) to establish commonalities, and also differentiating features that led farmers to pursue different approaches when dealing with crisis situations. Yin (2003) states that:

The logic underlying the use of multiple case studies requires each case to be carefully selected (through theoretical sampling) so that it either: (a) predicts similar results (a literal replication) to extend and test the theory; or (b) predicts contrasting results but for predictable reasons (a theoretical replication) to extend the theory (p. 47).

Using multiple cases can support arguments for the legitimacy of case studies (MacPherson *et al.*, 2000: 56). Yin and Ragin advocate the use of multiple case studies suggesting the single study has several limitations regarding analytical power and pervasiveness and generalisability (Verschuren, 2003).

Interviews were chosen as the main data collection tool and were recorded and transcribed. Semi-structured interviews have the potential to generate rich and detailed accounts of the individual's experience; offering flexibility (Cassell and Symon 1994). Questions were centred around the economic issues farmers face and the sustainability of the supply chain.

Data were analyzed using constant comparison and thematic analysis. Glaser (1996) states that the process of constant comparison continually compares data to data, concept to data, concept to concept, and linking concepts back to the data (p. 98).

## 6. Findings

### 6.1. Theme 1: Lack of power

The case show that farmers share the same concerns as groups such as the UK Food Group, the National Farmers Union, even the Competition Commission that they are not receiving a fair price for their products and are rendered powerless against the buying power of supermarkets. The insufficient levels of economic returns available to farmers are no surprise, considering the arrangement of the field and the distribution of power. This confirms previous research that farmers have become the weakest link in the food supply chain (Curry *et al.*, 2002; Whatmore *et al.*, 1991). Without market power, farmers can add value, but they cannot keep that value for themselves (Levins, 2002).

If you go to the head of the game yourself a little bit, try spreading your costs, which often means increase production. The only economic way of increasing profit is to increase the price you charge for your goods. Well that is impossible. You can cut your costs; well we are all trying to do that all the time – whether we have done that enough, I don't know. Or, you can increase production and spread those costs. It is hard, but I think you have got to try and look at increasing production where you can...there are a lot of people going out; but there are also a lot of people expanding (Farmer, 2).

These concerns were felt across the sample and are not only confined to the dairy sector:

Over the last ten years supermarkets are able to control what they pay for food – in my case pigs – simply because they take such a large volume. Due to the unprecedented rise in cereal prices, pigs have lost on average £20 each for many months. Supermarkets are well aware of this but their view is let the market work. Yes, it will work but only after many farmers have gone out of business and supply falls dramatically. Farming is long term I must look a year in advance and decide what to do but accept what is offered every Friday (livestock sales). With size comes responsibility (Pig farmer, Henley 2008).

### 6.2. Theme 2: Low farm-gate prices

Farmers have faced financial pressures for a long time (Johnsen, 2004), increases in costs (Van der Ploeg, 2000), low milk prices (Colman and Harvey, 2003; Colman *et al.*, 2004; Curry *et al.*, 2002; RABDF, 2004), resulting in low incomes for many farmers (Curry *et al.*, 2002; Gasson *et al.*, 1998).

The price for milk is diabolical, how can I reinvest when I'm using an overdraft just to stay afloat, it makes me angry when the Tescos of the world are making billions and I'm struggling to make a living (Farmer, 3).

The soil association agrees with farmers:

Many farmers around the world are suffering from prices for their products which do not cover the cost of production, and this is certainly true in the UK. People talk about the food chain in the food industry but in reality it's a fear chain. Everyone involved is frightened of losing out—the buyer of not meeting his profit margin, the packer of being de-listed by the supermarkets, the grower of rejects or being priced out of business (Holden, 2003).

### 6.3. Theme 3: Financing costs

Farmers also have the added pressure of increasing debts and succinctly point out by Farmer, 1:

The cost of borrowing is going up, which is a worry for farmers who have borrowed huge sums of money to reinvest. The milk price just doesn't justify the outlay, the future needs to have a basic minimum milk price, which covers production costs, including family labour.

The lack of economic return is a major factor as farmers need to cover costs of production, before they can re-invest in the business. These problems were identified by all types of farmers and succinctly put in the quote below:

A lot of people have invested huge sums of money in 1995 when prices were good and things looked as though they were going to get better; spending £80-£100k on new tanks and parlours. They are now struggling to pay that off and finding they have too much capital tied up. They have decided to give up order to clear debts (Farmer, 2).

### 6.4. Theme 4: No money for re-investment

Others are wary of borrowing for fear of losing the farm.

The problem is there is not the capital to re-invest in equipment, let alone expanding. We don't want to get too much into debt, otherwise it's a spiral out of control and the farm no longer is family thing, it becomes the property of the bank" (Farmer's Son, 3).

There is no money for reinvestment, so you don't bother about that and only spend money when something goes wrong. You pray nothing goes wrong, because you can't actually afford to have major works done. Profit is important. I couldn't keep going if I wasn't making a small profit. I'm not bothered about making millions, I just want to make enough for the work I do and that means I need to receive cost plus 5% for my produce in order to survive. I have other costs of living to cover such as tax and council tax rates etc. The biggest problem is people don't really know the true cost of production; they don't think about family labour and how much that costs" (Farmer, 9).

#### 6.5. Theme 5: Subsidising the farm

Results also confirms that farmers diversify activities to increase business income (e.g. Carter, 1999 amongst others). "We have diversified, it gives us a bit of extra income" (Farmer, 4). Farming families follow long-term goals rather than short-term gains for the business, thereby promoting family solidarity. Business strategies do not necessarily seek to fulfil profit maximisation in the short-run and production requires long term planning and cannot always take advantage of the changes in market conditions.

Farmers and their families have sought to increase their economic capital in various ways, reducing costs, minimising inputs, diversifying, taking off-farm employment and so on. In most of my cases, one family member had a job external to farming to supplement incomes. This demonstrates farming families' tenacity to keep the family business for future generations. However, despite these efforts, farm businesses are struggling to retain economic capital; prices received for their products are reducing while costs, principally feed and energy are increasing. This was the case for all farmers interviewed. In seeking ways to regain their share of the profits available, some farmers have moved up or down the supply chain by, for example, using their milk to make cheese or sell products direct from the farm.

We produce our own cheese, we have a farm shop and we have educational trips for various organisation including schools. The last five years have been difficult as more and more farmers move into producing their own cheese our margins have diminished and we do not have the turn over for supply someone like Tesco. I don't know how long we will continue to do this, especially if costs keep increasing (Farmer, case 8).

The farmers and their families were asked whether they thought the dairy supply chain was sustainable in its present form and the majority of those (except the very large farm directly supply Muller) felt that it was unsustainable and needed to change if we are to encourage young people into the industry.

How can it be sustainable, do these people know what sustainable is? All they are bothered about is short-term gains at the expense of anything for the long-term so long as they make record breaking billions they are not bothered if it crushes millions of people into poverty, puts small businesses out of business, they think we're inefficient, UK dairy farmers are amongst the most efficient in the world but we have high costs that we have to cover and we cannot do that on current milk prices. Where will it stop, when will someone do something – when its too late and we only have two mega-dairies supplying all the milk. I ask you one question will milk be cheap then? (Farmer's wife, 1).

Most of the farming families interviewed did not draw a wage from the farm business and in some cases two or more people would be working without a wage. Only if the business makes a profit would the farmer see any return.

## **7. Discussion**

High levels of economic capital enables agents to exert more power than others, for example: over the distribution of profits across the milk supply chain, whereby retailers and milk buyers retain the majority of any profits. Hence, farmers struggle for sustainable levels of the market price for milk, resulting in reduced business profits, and often difficulties in covering production costs.

Farmers have been facing an economic crisis for a prolonged period and the economic side of farming has long been known and talked about. Economic capital lies with larger, more powerful groups, as retailers, processors and farmer suppliers strengthen their position in the field and use power to retain levels of capital in their possession. These are not just fallacies created by farmers, the figures from independent

Policy makers need to address the economic crisis facing farmers and the imbalance of power across the supply chain. The current formation of the supply chain is not sustainable; this has been identified by farmers and other groups. Policy may also be more appropriate if it was disseminated in a local way. For example, specific local issues could be addressed depending on the factors facing farmers in that particular region. However, further

work needs to be conducted into how local policy could take into consideration variations in farm type.

With current resource constraints and rising global populations and food prices, policy makers should be encouraging farming, removing power from the retailer, and ensuring that farm gate prices are increased inline with increases in costs. Other players in the supply chain need to recognise that without farmers they would not have a product to manufacture or sell. A profit-sharing (fair trade) initiative could be created to support those at the bottom of the supply chain. Retailers are prepared to undertake fair trade deals with farmers in developing countries, and these schemes would not be difficult to extend to farmers in the UK, ensuring farming families in this country are not living below the poverty line.

Further work needs to investigate the true costs of production and develop an appropriate accounting tool to calculate family labour costs. Further research on the economic struggles in farming needs to focus attention on the problems of rural poverty and the effects it has on the rural community, especially in light of the Government's targets to eradicate child poverty.

Further research on the economic struggles in farming needs to focus attention on the problems of rural poverty and the effects it has on the rural community, especially in light of the Government's targets to eradicate child poverty. It is also worth noting that in some European countries it is illegal to buy goods below their cost of production, a law not applied in the United Kingdom (UK) as the Government sees it may hamper competition.

## **8. Conclusion**

The pressures on farmers today are perhaps greater than they have ever been. Small scale farmers are put at a disadvantage by the power of large organisations (whether retailers or equipment suppliers). Farmers need to be given the right 'tools' to empower themselves, they also need milk buying co-operatives to exert increased pressure on retailers to pass back increases in milk prices to the producer. Farmers will not be able to bear the increasing costs of production against historically, continuous low milk prices indefinitely.

Those in powerful positions should be concerned about farm business survival and be prepared to assist farmers with the challenges they face, especially in the current global situation of increasing population, food shortages, and economic and environmental pressures. Therefore, appropriate measures need to be implemented to ensure that a fair standard of living is achieved, and a fair return on investment for producing milk.

Of particular importance, however, is not the price charged by retailers or wholesalers, or their gross margins, but rather whether the price paid to dairy farmers provides them with a sustainable return to allow for investment in their business to ensure that they can continue to supply milk in an efficient and profitable manner (AHAD, 2010, p. 17). Therefore, how long before powerful players in the supply chain realise those producing milk must receive a better return for the future sustainability of the dairy supply chain.

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