

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/239923723>

Staff shortages and immigration in agriculture

Article · January 2008

CITATIONS

8

READS

2,307

2 authors, including:



[Maja Zaloznik](#)

University of Oxford

11 PUBLICATIONS 43 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Population Horizons [View project](#)

STAFF SHORTAGES AND IMMIGRATION IN AGRICULTURE

SAM SCOTT, University of Liverpool

with

ASHLEY MCCORMICK and MAJA ZALOZNIK, University of Liverpool¹

31 July 2008

A PAPER PREPARED FOR THE MIGRATION ADVISORY COMMITTEE (MAC)

Web published by the Migration Advisory Committee
September 2008

www.ukba.homeoffice.gov.uk/mac

¹ The data input and analysis of the 'Migration and Labour Shortage Survey,' the University of Liverpool and NFU survey undertaken in April 2008, which forms part of this paper was carried out by Ashley McCormick and Maja Zaloznik. Both are currently PhD students in the Department of Geography at the University of Liverpool.

Project Overview

Executive Summary

1. Overview of the sector

2. Employer demand: What are employers looking for?

3. Labour supply: Who wants to do what?

4. Immigration and labour demand: How and whom do employers recruit?

5. Immigration and alternative responses: A need for migrant labour?

6. Conclusion: Implications for analysing staff shortages in the sector

7. Acknowledgements

Project overview

“A set of review papers on the micro-level determinants of employer demand for migrant labour and the alternatives to immigration for responding to labour shortages in key sectors of the UK economy.”

This paper is part of a research project commissioned by the Migration Advisory Committee (MAC), a body of independent economists set up by the UK Government in late 2007. The MAC has been tasked to advise the Government where in the UK economy there are skilled labour shortages that can be “sensibly” filled by migrant workers from outside the European Economic Area (EEA).² The MAC’s current remit focuses on skilled labour shortages. Specifically, the MAC has been asked to produce a list of “shortage occupations” for Tier 2 of the UK’s new points-based system. However, future work may also involve analysis of low-skilled labour markets. As explained in its recent report on “Identifying skilled occupations where migration can sensibly help to fill labour shortages” (February 2008), the MAC’s methods will include “top-down” approaches (including analysis of available data from employer skills surveys and the labour force survey) and “bottom-up” approaches which provide more detailed micro-level information about the nature and determinants of labour demand, supply, staff shortages and alternatives to immigration for filling vacancies in key sectors and occupations.

This research project contributes to the MAC’s bottom-up approach by providing an independent analysis and assessment of the nature and determinants of staff shortages in key sectors and occupations of the UK economy. Given the short time period within which the MAC needs to produce its first list of shortage occupations (July 2008), the main method of this project has been to mobilise existing information and research rather than to generate new data. To this end, academic experts provided an analytical research perspective on staff shortages and immigration in seven sectors of the UK economy: agriculture, food processing, financial services, construction, hospitality, health care and social care. Although taking a sectoral approach, the seven “sectoral review papers” highlight and discuss key occupations in each sector. All sectoral review papers were written during April-May 2008 and are based on a common template of questions. A separate paper discusses key concepts, selected empirical findings from the sector papers, and the implications for a skills-based immigration policy.

² The EEA includes the EU 27 plus Iceland, Liechtenstein and Norway.

All papers in this research project were coordinated by Bridget Anderson and Martin Ruhs, with the assistance of Rutvica Andrijasevic and Karin Heissler (all at Centre on Migration, Policy and Society (COMPAS) at the University of Oxford). The full list of papers produced for this research project is:

Concepts and overview:

Anderson, B. and M. Ruhs (2008) "A need for migrant labour? The micro-level determinants of staff shortages and implications for a skills-based immigration policy", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Sectoral review papers:

Bach, S. (2008) "Staff shortages and immigration in the health sector", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Chan, P., Clarke, L. and A. Dainty (2008) "Staff shortages and immigration in construction", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Geddes, A. (2008) "Staff shortages and immigration in food processing", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Jones, A. (2008) "Staff shortages and immigration in the financial services sector", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Lucas, R. and S. Mansfield (2008) "Staff shortages and immigration in the hospitality sector", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Moriarty, J., Manthorpe, J., Hussein, S. and M. Cornes (2008) "Staff shortages and immigration in the social care sector", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Scott, S. (2008) "Staff shortages and immigration in agriculture", A report prepared for the Migration Advisory Committee, Migration Advisory Committee (MAC), London

Executive Summary

1. Overview of the Sector

Most of us, when we think of how the fresh food that we eat arrives on our dinner table, picture a lone, usually male, family farmer; but this image is both an oversimplification and anachronistic. UK agriculture is incredibly diverse. The lone family farmer still exists, but may well be renting land to other producers rather than actually doing much farming; and even if he or she is still farming, there will be a whole host of other farm-based jobs attached to this apparently 'simple', bucolic way of life.

In the UK these farm-based jobs have, over the past decade in particular, been filled by migrant workers. This is especially true for labour-intensive and/or highly seasonal crops. The 'general cropping' and 'horticultural' components of UK agriculture stand out in this respect: they account for 47 percent of total agricultural employment, and 62 percent of all temporary agricultural employment in the UK. Labour demand varies according to both the seasonal specificities of the crop, and the loosely related ebb and flow of consumer (and therefore retailer) demand.

To deal with fluctuations in demand, farmers in the labour-intensive and/ or highly seasonal sectors of UK agriculture rely on two types of worker: they employ a small and ever-declining number of permanent staff (comprising the 'primary' labour market); and a large number of temporary staff (encompassing the 'secondary' labour market). These temporary employees are recruited directly by the farmer/agribusiness and also indirectly via labour market intermediaries (gangmasters, recruitment agents, and informal networks).

At present, UK agriculture appears to be experiencing shortages within its 'secondary' but not 'primary' labour markets. This is despite the fact that the total volume of agricultural labour in the UK has declined by over 50 percent since 1973. Paradoxically, while far fewer workers are needed than has ever been the case before, far fewer UK workers are willing to do agricultural work. The problem is about 'getting the harvest in' – of getting crops planted, maintained, and picked – at a pace in-line with the unpredictability of consumer (and therefore retailer) demand.

In terms of why these shortages exist, it is useful to remember – as Anderson and Ruhs (2008) tell us – that they are socially constructed. The British population over recent years

has become reluctant to fill low-paid and insecure vacancies in agriculture, a sector notorious for its long hours and 'back-breaking' work. At the same time, agricultural employment has become less appealing in both an absolute sense (see Rogaly forthcoming) and in relative terms (see Newby 1977). For various reasons, workers from outside the UK have been attracted to agricultural employment and so have mitigated the impact of the changing construction and perception of agricultural work. Migrant labour has also changed UK agriculture; allowing it to develop along a path that may otherwise have been financially unviable.

2. Employer demand: What are employers looking for?

At the risk of over-simplification, agricultural employers need relatively unskilled labour on an 'as and when needed basis' at the cheapest possible cost. Labour shortages occur when UK workers refuse to accept low paid, insecure employment in agriculture; choosing either better paid, more secure jobs, or, withdrawing from the labour market altogether. Shortages are particularly acute in agriculture because of the huge difference between low and peak season labour demand.

Over the course of a year, UK farmers will require between 31 and 105 extra workers as they move from low to peak season. Their employee base multiplies by between four and seven times as a result. The urban equivalent to this incredible demand volatility would be a car plant producing cars for six months of the year and then laying off the vast majority of staff for the remaining six months. Tourism is the only other industry we can think of that behaves like agriculture.

Demand for temporary agricultural staff to meet this peak-season uplift is met either through employers recruiting directly, or using labour market intermediaries (for example, gangmasters, employment agencies, Seasonal Agricultural Workers Scheme (SAWS) operators). According to the findings from 'the Migration and Labour Shortage Survey' conducted by the University of Liverpool and National Farmers' Union (NFU) in April 2008, around 70 percent of temporary workers are taken on directly and 30 percent via an intermediary.

In terms of labour supply, just over one-third of farmers we surveyed (38 per cent) felt that, since 2003, it had become more difficult to find workers to meet peak-season labour demand. For most of the remaining farmers (48 per cent), difficulties in meeting labour

demand were a more recent phenomenon: they noted that between 2003-2006 it had either become easier to find workers, or there had been no change in labour availability; but that from 2007 onwards it had become harder to find workers. Farmers explained this shift with reference to the slowing of immigration from Central and Eastern Europe and were concerned that the loss of SAWS in 2010 would only magnify the problem of labour availability at harvest time. Linked to this concern, most UK farmers appear to be preparing for an increasingly tight labour market: 92 percent of the 268 farmers surveyed expected to experience recruitment problems in the future; 73 percent talked about the problem of getting seasonal labour; 67 percent expressed the problem of getting employees with the 'right' attitude and work ethic; 34 percent were worried about skills shortages; and 26 percent were concerned about the availability of year-round workers.

Essentially, even though farmers' demand for workers has fallen by over 50 percent since the early 1970s, their ability to compete for staff has also declined. A number of factors explain this:

- The value of fresh produce has fallen relative to other goods and services in the UK economy because, as the country has become more affluent, people spend a lower proportion of their income on subsistence goods like food.
- Power has shifted to the retailer and consumer, with producers becoming price-takers rather than price-setters.
- Margins for farmers have declined with productivity and turnover having to rise to ensure profitability.

These changes explain the declining ability of farmers to meet their demand for labour.

3. Labour supply: Who wants to do what?

Supply of labour into UK agriculture has tightened since the 1970s largely, but not only because of farmers' weakening wage-bargaining position. British-born employees no longer see the industry as offering a viable career-path, and to address this, farmers have turned to migrant workers. Until 2004, large numbers of these workers were employed illegally, comprising: East Europeans, Chinese, asylum applicants, failed asylum seekers (and also UK benefit claimants). After European Union (EU) enlargement in May 2004, and the *de facto* regularisation of East Europeans, many irregular workers were displaced (facilitated by the increase in fines directed at employers, also in 2004).

Migrant workers are more willing than British workers to supply their labour to UK farmers if the income they receive rises in value when transferred to their home country; if they see the work as a platform to upward socio-economic mobility; and/or if they are desperate (for example, if they are irregular migrants). In contrast, the supply of British workers into UK agriculture has declined because the rural working-class has shrunk; farm employers have become less paternalistic as employers and more narrowly business-focused; job opportunities have grown in more attractive service-based occupations, and; farm work has lost its local social status ('interactional' qualities) and is now judged against a national hierarchy of work and employment ('attributional' qualities).

4. Immigration and labour demand: How and whom do employers recruit?

The picture outlined above is mirrored elsewhere in the developed world and the UK is not alone in its reliance on migrant agricultural workers. Geographically, these workers tend to concentrate in certain (horticultural) areas: California in the United States (US), Ontario in Canada, and the Wash in the UK. In eight out of the 20 Local Authority areas we studied around the Wash, as part of our research for the Gangmasters Licensing Authority, 75 percent or more of the A8 migrants there were employed in food-related activities (see Scott et al. 2007). There are also a number of noteworthy secondary concentrations of migrant agricultural activity in the UK, namely: Fyfe, Perthshire, Kinross and Angus; Herefordshire and Worcestershire; Kent; West Lancashire; Cornwall; North Lincolnshire and Humberside; West Sussex and Hampshire, and Suffolk.

The importance of immigration in meeting demand within 'secondary' harvest-based labour markets is evidenced by the fact that only 16 percent of the peak season workforce in the 268 farms surveyed during April 2008 were British born. In other words, 84 percent of all peak season agricultural workers are now migrants. The figure is even higher if one just looks at the very large farms, with the majority of migrants coming from A8 (49 percent) and A2 (32 percent) EU countries. To put this in an historical context, in the 1970s only 1.3 percent of agricultural workers were born abroad (Newby 1977: 157). In terms of why migrants were preferred, 91 percent of survey respondents cited their work ethic. The group of workers receiving most praise were those on the Seasonal Agricultural Workers Scheme (SAWS) and farmers also noted a strong preference for Polish workers (although the quality of A8 workers had apparently started to decline over the past 12 months).

5. Immigration and alternative responses: A need for migrant labour?

Farmers do not have to use migrant workers to meet labour shortages. Moreover, in theory at least, labour shortages need not actually exist at all. The question, then, is whether there are alternatives to immigration; which is, after all, a symptom of an industry under stress, rather than a solution to the underlying causes of this stress.

Broadly speaking, there are four types of solutions to the now long-running demand-supply disequilibrium within UK agriculture:

- i. Improve the attractiveness of the agricultural 'work offer.'
- ii. Channel inactive British citizens into agricultural vacancies.
- iii. Import workers willing to do agricultural work as it is currently constituted.
- iv. Change the type and location of agricultural work; in the case of the former to reduce the demand for labour, and in the case of the latter to move the work to where labour is cheaper.

The first solution would involve farmers reducing the size of their secondary labour market, and offering better pay and more secure employment. The dilemma is who pays for this, and what the social and macro-economic consequences of food price inflation would entail? The second solution would involve the government either supporting inactive British citizens back to work, or pressurising them to accept temporary agricultural employment. There are two dilemmas here: first it would be difficult to successfully re-integrate people into employment in a sector that is notoriously tough and poorly rewarded; second, should the state 'force' people into work, irrespective of the quality of the work on offer? The third solution has already been discussed above. There are two dilemmas with using migration to address labour shortages: first, migrants tend to use agricultural employment as a 'revolving door' and so their supply is far from guaranteed over the medium to long term; second, migration may actually slow technological innovation. The fourth solution would involve farmers shifting away from labour-intensive crops, using machinery to reduce demand for labour, and/or moving production to lower-wage countries. The dilemma here relates to whether or not a diverse agricultural sector and national self-sufficiency in fresh produce should be policy priorities?

6. Conclusion: Implications for analysing staff shortages in the sector

The use of migrant workers in UK agriculture to address labour shortages has historical precedents in other sectors of the economy (especially heavy manufacturing). The question for the government is whether low-status seasonal immigration is the long-term solution to the profitability problems and continued restructuring occurring in UK agriculture. It certainly has not been a long-term solution in the past for other struggling industries.

Our view is that there will always be a demand for temporary agricultural labour and that this demand is most likely to be met through immigration unless either the UK economy undergoes a prolonged period of recession (and the service sector contracts), or UK consumers start paying more for their food, and retailers pass this money down the food supply-chain. An improved version of SAWS extending beyond the EU is well-suited to meeting this demand and is currently being discussed at an EU level via the proposed Directive on 'Entry conditions and residence of seasonal workers from third countries' set to be published in late 2008.

We also believe that the demand for migrant agricultural workers can be reduced: there is still scope for technological innovation. It is also likely that some farmers will shift production by moving to less labour-intensive crops (for example, rape seed) and by setting up overseas operations (for example, in eastern and southern Europe). Furthermore, there is massive scope to invest in the recruitment and training of British workers and improve the agricultural 'work offer' available to them. This, however, would require considerable resources to develop re-integration schemes for hard-to-reach British inactive and/or unemployed workers, and to provide vocational training for post-16 school leavers. Agriculture will never attract the 'brightest and best' academically, but the fact that it no longer attracts hard-working (but educationally low-achieving) British students, and is also now struggling to attract migrants, are worrying signs. It is easy to blame British farmers for this, but the problem is not isolated to the UK and must be understood in relation to the structure of global agribusiness and the social, economic and political importance of relatively cheap food within the developed world.

ACKNOWLEDGEMENTS

Material used in this chapter has been drawn from three main research projects Dr Sam Scott is involved in: 1) in-depth interviews with UK salad growers and processors (funded by the Nuffield Foundation, Grant No. SGS/33876.01); 2) an annual review of the agricultural 'gangmaster' system and its governance (funded by the Gangmasters Licensing Authority); and 3) 'the Migration and Labour Shortage Survey,' a survey of UK farmers and their labour supply and demand requirements (an unfunded collaboration between the University of Liverpool and the National Farmers' Union (NFU)).

Dr Sam Scott is grateful to the Nuffield Foundation, Gangmasters Licensing Authority and the NFU, respectively, for their cooperation and support on these projects. He would also like to thank Paul Brindley for producing the maps used in this paper and his co-researchers Professor Andrew Geddes, Miss Katrine Bang Nielsen and Dr Alex Balch.

1. Overview of the sector and its labour demands

Agricultural workers are a group of whom most people have little knowledge or understanding, scattered in small numbers across the countryside, often living in isolation from even local centres of population, their existence is only occasionally acknowledged...It is the farmer – not the farm worker – who produces Britain's food (Newby 1977: 111).

1.1 Diversity

It is important to recognise from the outset that 'agriculture' is a complex sector made up of a number of different labour markets. Demand is dependent, therefore, on nuances within the sector, and it is impossible to talk in generic terms of 'an agricultural labour shortage' or 'an agricultural labour market.' In terms of this diversity, National Statistics record agricultural employment through a variety of Standard Occupational Classification (SOC) and Standard Industrial Classification (SIC) codes (refer to Appendix 1 for an explanation of these). The SOC and SIC codes can be compared against variables such as worker nationality and wages (see Appendix 2, Table 1), as well as gender (see Figures 1 and 2). They allow the different types (occupational levels and employment tasks) of agricultural employment to be compared against each other, and for agricultural employment to be compared against other sectors and job types within the UK economy.

However, many jobs within agriculture may not be specifically 'agricultural.' For example, farms are now run as businesses; with larger-scale industrial farmers employing marketing staff, accountants, secretaries, and others. Furthermore, many farmers use gangmasters or employment agencies and they tend to record their staff as general workers rather than specifically agricultural workers because they move them between sectors according to where the work is available.

Focusing purely on agricultural employment, there is considerable variation in labour demand between different types of activity and between farms engaged in different combinations of such activity. In terms of the former, one can distinguish between highly seasonal (for example, soft fruit), seasonal (for example, salad produce and turkey) and year-round activity (for example, dairy) as well as between labour intensive (horticulture) and capital-intensive (other arable) activity. In terms of the latter, many farms are specialist producers and have very peaky labour demand patterns associated with a single output

type. Some producers, however, off-set peaks in one activity at one time of the year with peaks in another activity at another time of the year. These generalists have a steadier labour demand profile as a result and so the impact of seasonal labour shortages are less severe.

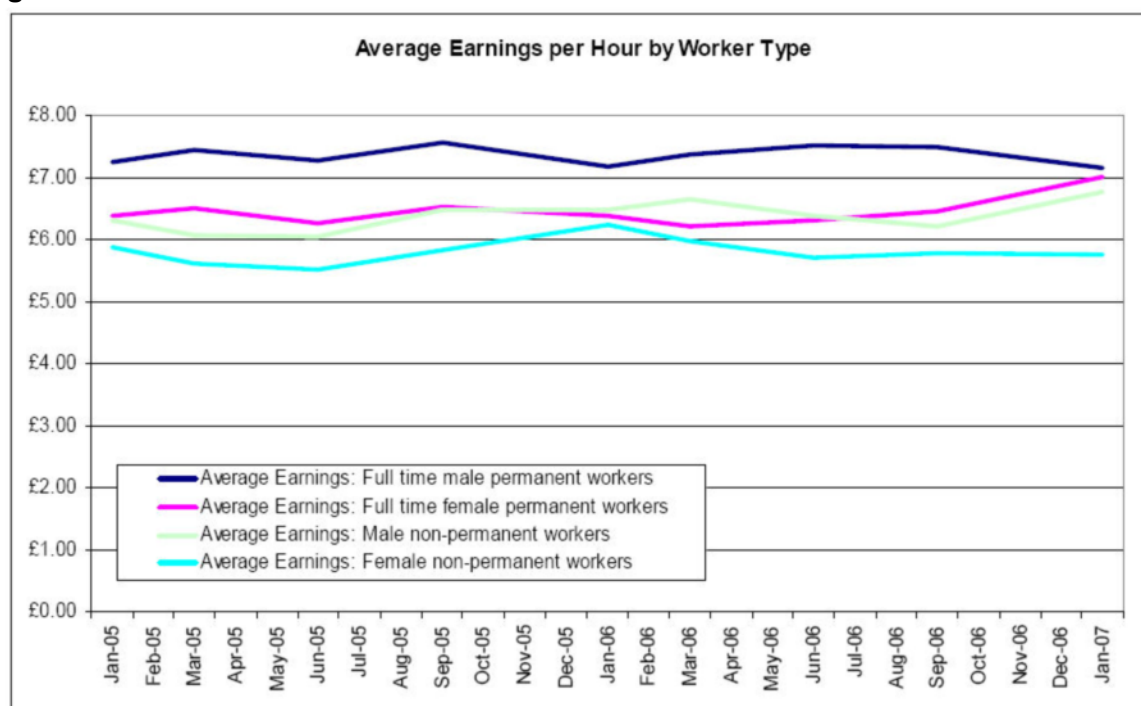
It is also important to make a distinction between permanent and temporary agricultural employment: what we term 'primary' and 'secondary' labour markets. In terms of the former, the Department for Environment, Food and Rural Affairs (Defra), via the Agricultural Wages Board, distinguish between five 'grades': Grade 1 Basic Trainee; Grade 2 Standard Worker; Grade 3 Lead Worker; Grade 4 Craft Grade; Grade 5 Supervisory Grade; and, Grade 6 Management Grade. Each grade has a different minimum hourly pay rate.³ In terms of the latter, farmers either recruit temporary workers directly or they employ intermediaries (for example, gangmasters, recruitment agencies, and Seasonal Agricultural Worker Scheme (SAWS) operators).

There are also gender divisions in UK agriculture. These are evident in relation to how certain tasks are distributed between male and female employees and in terms of pay differentials. For example, Figure 1 shows how, in relation to permanent and temporary agricultural employment, there is gender disparity in average hourly pay (see Figure 1). It is also the case that certain crops have specific gender preferences associated with them: soft fruit, for example, tends to be harvested by women with 'nimble fingers' than men, while larger bulkier crops (for example, lettuce and brassicas) tend to get cut by machete-wielding men.

Finally, Defra divides agriculture into a number of constituent parts for statistical purposes. These are: cereals (including wheat, barley, and oats); other arable (such as oil seed rape, sugar beet, peas and beans); potatoes; horticulture (comprising vegetables, fruit, flowers, and glasshouse crops); cattle; sheep; pigs, and; poultry. Each subsection of agriculture has a particular (sometimes gendered) labour demand structure, and as we will show, it is the horticultural sector that is most relevant when talking about labour shortages and the need for temporary migrant workers.

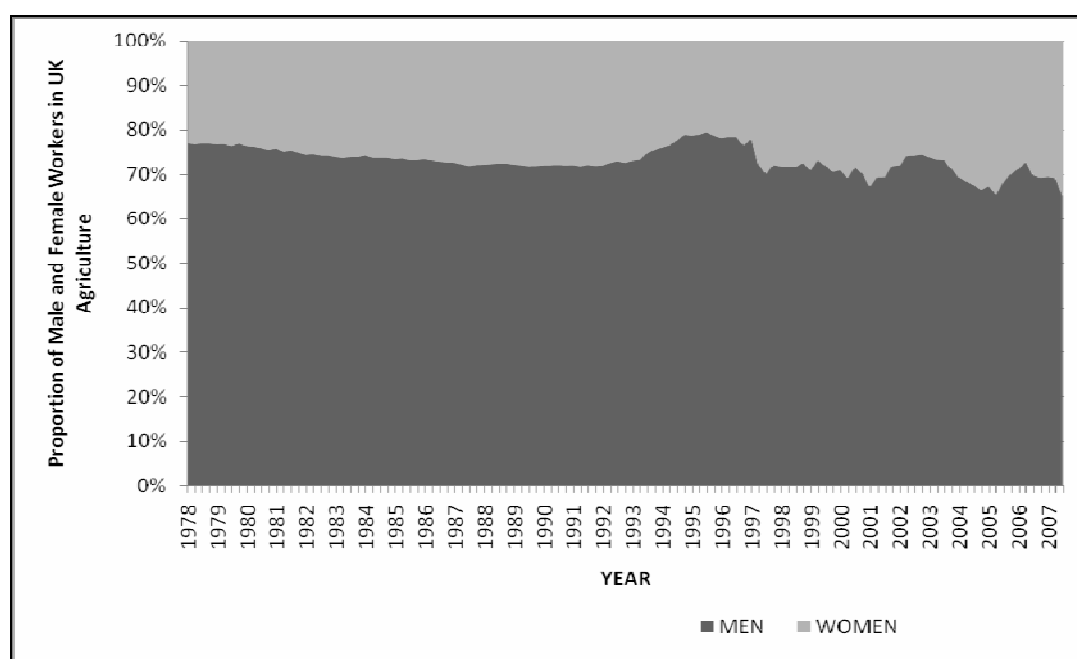
³ Agricultural employment is governed both National Minimum Wage (NMW) and Agricultural Wages Board (AWB) legislation: with different AWBs for England, Wales, Scotland and Northern Ireland.

Figure 1: Average earnings per hour for permanent, temporary and male or female agricultural workers



Source: (Defra 2007a: 15).

Figure 2: Changing Gender Composition of UK Agricultural Workforce (1978-2007)



Source: SIC Data (2008), authors' own chart.

1.2 Immigration

Migrant workers tend to be found in labour-intensive sectors, and specifically at farms where demand is inconsistent and seasonal. In other words, they meet a particular labour market niche associated with the need for temporary and flexibility workers. In the current economic climate, there is no way in which this niche could be transformed into secure and stable year-round employment, and it is little wonder that UK workers avoid such work (see Rogaly forthcoming). What we tend to see, therefore, is older UK workers in supervisory, managerial and general secretarial roles, with younger “migrants doing the back-breaking work” (UK lettuce grower May 2008)⁴ usually on temporary contracts. In-depth interviews with farmers carried out between June 2007 and June 2008 also show that some migrants are now filling permanent and more skilled agricultural vacancies as older British workers retire. It is not simply a case, therefore, of migrants working at the bottom of the agricultural labour market; even if almost all will have worked in entry-level jobs at one point in time.

Secondary Data

The problem in ‘getting to grips’ with agricultural labour demand is that we have relatively limited statistical information that can directly help us to appreciate the nuances of this demand and the specific migrant and British-born dimensions to it. Limitations aside, there are a number of useful secondary data sources that can be drawn upon:

- SIC data for the SIC Code 01 (source: Office for National Statistics on agriculture and forestry);
- SOC data by country of birth from the Labour Force Survey and Annual Population Survey (source: Labour Force Survey (LFS) and Annual Population Survey (APS));
- Annual Agricultural Census with data on permanent employment, casual employment, income from farming and many other variables (source: Defra);
- Worker Registration Scheme (WRS) data by nationality and sector (source: Home Office)
- SAWS data (source: Home Office)

Table 1 in Appendix 2 provides a breakdown of the most pertinent SOC classifications as far as agricultural employment is concerned. What seems clear from the table is that secondary

⁴ This quotation comes from an interview carried out with a UK farmer in May 2008 as part of a Nuffield Foundation funded research project into the UK salad industry.

processing related activity (see Geddes 2008) has a much higher migrant penetration rate than primary agricultural activity. The relatively low gross hourly pay rates across almost all the SOC codes are also striking. However, it is important to recognise that the SOC data is problematic because of the small sample sizes, and the fact that different employment relationships affect the robustness of the data. For example, temporary, gang-based, labour supply is more likely to be missed from the LFS and APS survey, as are smaller field-based seasonal operations that do not have a fixed central site. In contrast, large-scale industrial pack-house based employment is more likely to get recorded. This suggests that the extent of migrant penetration in UK agriculture may be underrepresented, and that wage levels may be over-estimated by virtue of the survey missing the most marginal temporary and largely migrant workers.

In Figures 3 and 4 and in Table 2 (Appendix 2), trends in overall agricultural labour demand from the Annual Agricultural Census are presented. The picture is clear: both permanent and temporary forms of agricultural employment are on the decline. This trend goes back (at least) to the intense period of mechanisation that followed World War II (the second agricultural revolution). The most recent data from the June 2007 agricultural census shows that the total farm labour force in England was down 2.2 percent since 2006 to 353,000, with the number of full-time farmers falling by 5.1 percent to 92,000 (Defra 2007a: 1). To put the labour decline in historic context, the total volume of labour has fallen by 51 percent since 1973 due to a 65 percent drop in paid labour and a 39 percent fall in entrepreneurial labour (Defra 2007c: 94). Very simply, there is much less work available within primary agricultural labour markets. Paradoxically, however, labour shortages appear to be growing.

Interestingly though, data in Table 2 (in Appendix 2) indicate that even with total employment declining, UK agriculture is seeing an increase in the number of salaried managers and part-time workers. The former trend can be explained by the continued industrialisation and bureaucratisation of farming, while the latter trend may be related to the decline in the use of intermediaries to supply seasonal, casual, and/or gang workers (for example, companies substituting indirectly recruited flexible workers for directly recruited ones). It must be noted, however, that the year-on-year changes are subject to a sampling error of over 10 percent and should be treated with caution.

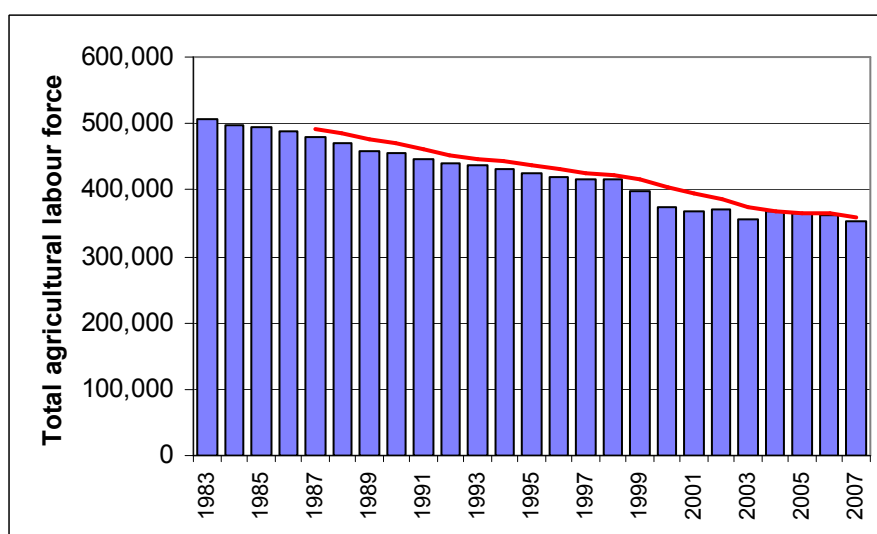
In terms of gender, SIC data for UK Agriculture (Code 01) shows that the decline in agricultural employment since the 1970s has been accompanied by a rise in the proportion of female agricultural employees (see Figure 2).

Defra also provides data for specific agricultural outputs and labour markets, making it possible to look beyond the aggregate SOC codes and employment trends discussed above. This is vital because, as has been already argued above, agriculture is an incredibly diverse and dynamic sector and one should think in terms of a multitude of different labour markets. Figure 5 charts the value of different agricultural outputs over the past 20 years to indicate the changing composition and importance of different agricultural sectors. One of the big shifts in this respect has been the dramatic rise in the value of horticultural outputs relative to other outputs. Furthermore, although livestock and cereals remain the ‘staple’ of UK farming in financial terms, horticulture accounts for a disproportionate share of agricultural employment.

Overall, paid labour costs farms an average of £22,700 per year (Defra 2007a: 5), and the total cost of labour for 2007 was £2.4 billion (Defra 2007c: 94). However, one must look beyond these aggregate statistics. Considering Figure 5 and Table 3 (in Appendix 2) together, for instance, we see that labour use is particularly high for certain crops relative to their output value (General Cropping and Horticulture stand out in this respect and together account for 47 percent of all agricultural employment). Moreover, where labour use is high relative to output value, for example, where outputs are labour-intensive, more use is made of temporary labour: with 59 percent of general cropping employment and 46 percent of horticultural employment being temporary (these two sectors account for 62 percent of all temporary employment in UK agriculture). In other words, certain types of agriculture require significantly more workers and this demand is accommodated – to a greater degree than one would otherwise expect – by temporary employees (directly employed part-time staff and/or gang-based or agency-based staff).

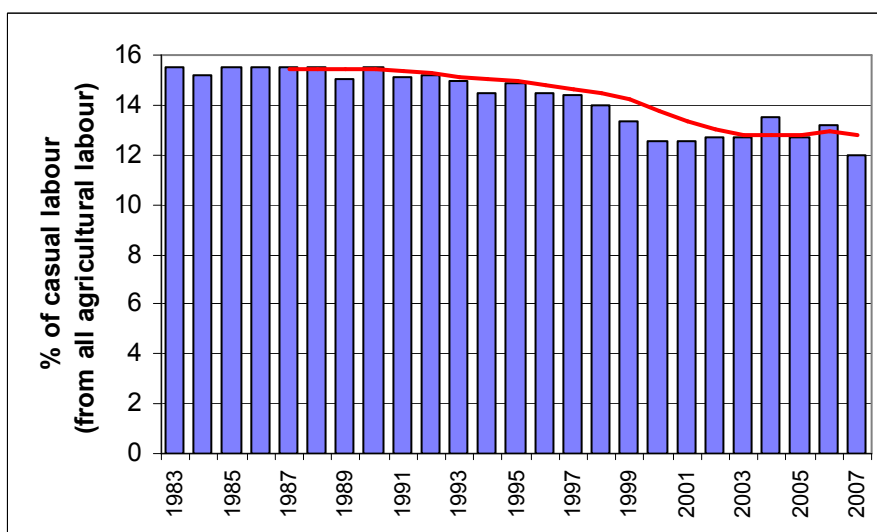
It is worth dwelling a little on the use of temporary labour in UK agriculture. Historically, there has always been demand for temporary workers and this was usually met via the ‘gangmaster system’ (Brass 2004). This system has been present in the UK since at least the nineteenth century, but, it has certainly not been omnipresent: it has tended to develop where arable farming is concentrated and is less prevalent in pastoral areas (Newby 1977). This pattern still exists today: evident when one compares the distribution of casual agricultural workers (see Figure 6) and UK gangmasters (see Geddes 2008) with the distribution of labour-intensive arable crops (especially horticulture, refer to Figure 7). In short, there is a clear spatial relationship between agricultural output type and the use of flexible workers in ‘secondary’ agricultural labour markets.

Figure 3: Decline in Agricultural Employment 1983-2007 (with five year moving average)



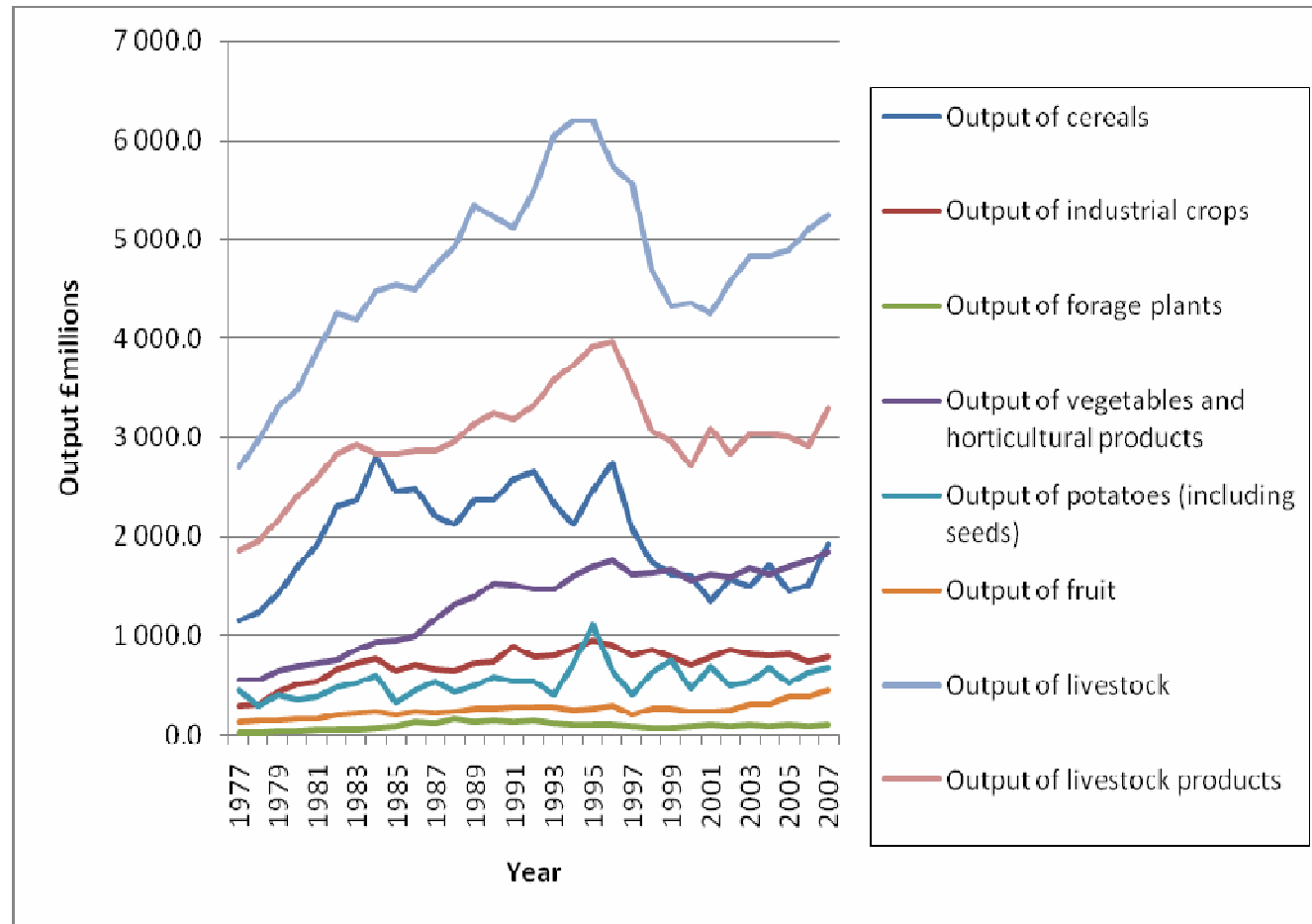
Source: (Agricultural Census/Agricultural Survey).

Figure 4: Proportion of Casual Labour Employment 1983-2007 (with five year moving average)



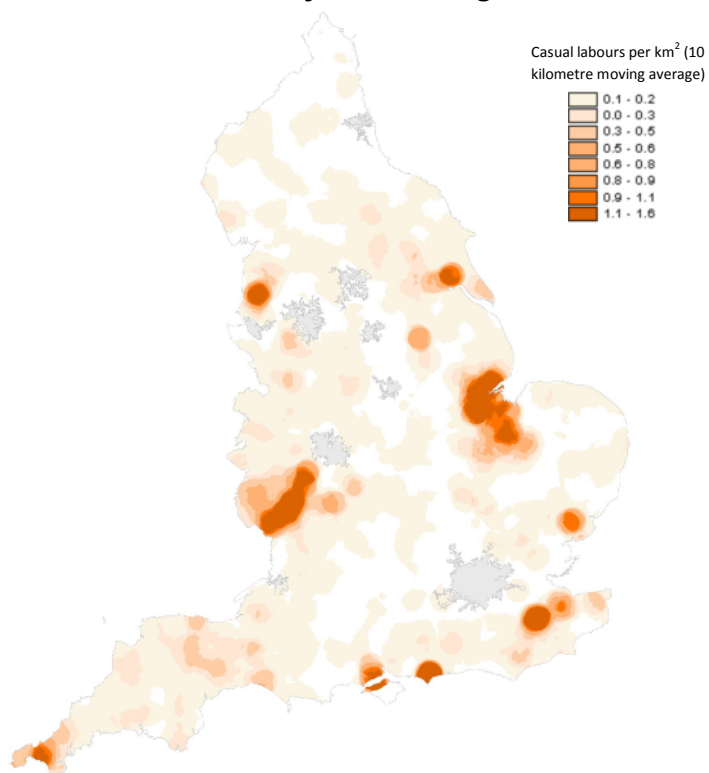
Source: (Agricultural Census/Agricultural Survey).

Figure 5: Value of UK Agricultural Outputs 1977-2007



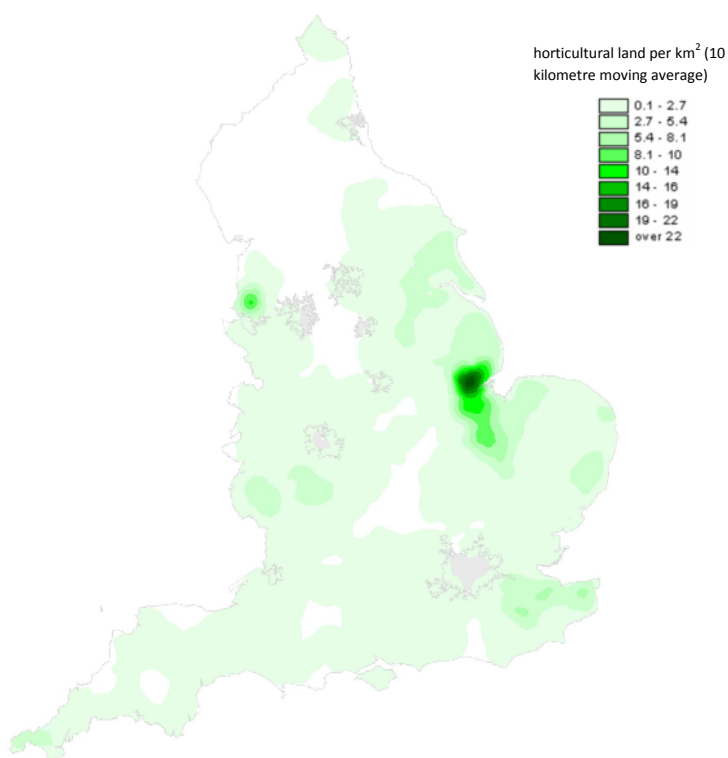
Source: Defra Annual Agricultural Census (2008)

Figure 6: Casual labour use as recorded by the 2005 Agricultural Survey



Source: (Agricultural Census/Agricultural Survey 2005).

Figure 7: Total horticultural land use as recorded by the 2005 Agricultural Survey



Source: (Agricultural Census/Agricultural Survey 2005).

Primary data

Alongside the official SOC and Defra statistics, in April 2008, 'the Migration and Labour Shortages Survey' was carried out as a collaborative effort between the University of Liverpool and the National Farmers' Union (NFU), to get more detailed and up-to-date insight into the labour market issues shaping UK agriculture. Details of the survey methodology are contained in Appendices 3 to 6. The purpose of surveying UK farmers was to examine if, where, when and why labour shortages and skills gaps were emerging. The responses received are not representative of the entire farming industry; however, they are representative of the segments of the UK farming industry reliant on migrant workers and facing particular labour shortages and skills gaps.

One of the most noticeable findings from the survey is the significant difference between labour demand at peak and low season. Table 4 shows the mean and median averages for farm employment in peak and low season: the average farm has between 31 (median) and 105 (mean) less workers in the low season than they do during peak season. The mean and median difference can be explained by the bifurcated structure of the industry: there are a large number of small operators employing relatively few workers, and a small number of large operators (category managers) with a large staff and turnover (see Figure 9 and Table 5). The lack of a significant 'middle' to UK agriculture means that it is important to use different measures of the 'average' (which shows central tendency around a 'middle'). In terms of farm size, over half of the survey respondents employed less than 50 workers; just under one-third employed over 100 workers; and 12 percent employed between 51 and 100 workers.

The variation in peak to low season labour demand within UK agriculture is one of the key reasons behind the current reliance on migrant workers. A useful way of examining the extent of labour market variance is to construct a 'peak season: low season' employment ratio. A ratio of 1:1 would mean a firm employs the same number of workers all year round; and the higher above one, the higher the seasonality in a firm's labour demand profile. For example, a ratio of 5:1 means that a firm employs five times more workers in peak season than they do during low season. Figure 9 shows the scale of seasonal variation in labour demand between the 268 survey respondents. The average agricultural firm will see its workforce grow by between four (median average) and seven (mean average) times over the course of a year. It is difficult to think of another industry subject to such variation (except possibly tourism).

The University of Liverpool and NFU questionnaire (see Appendix 4) was constructed in such a way as to enable a comparison between 'peak: low' ratios against firm size (based on total number of employees), and Figure 10 contains the results of this cross-tabulation. What clearly stands out is the fact that larger firms are much more seasonal in their labour demand. Clearly one would expect this to an extent: as larger firms are larger by virtue of their higher ratios. However, it was not expected that the results would be quite so consistent. What Figure 10 shows is that when ratios are high and firms are large, we have a category of farm that is effectively a very significant local employer; however, only for one part of the year. The urban equivalent would, for example, be a car plant only producing cars for part of the year, and laying off huge numbers of workers during other periods of the year. The big difference is that farmers are generally a significant distance from major employment and population centres, and so have a smaller stock of workers to draw on than our hypothetical car plant.

There is a common view that the gap between peak and low season employment in UK agriculture is generally filled by recourse to gangmasters or employment agencies. We examined this in the survey in order to understand how businesses deal with seasonality in their labour demand. During peak season the average farm employs between 20 (median) and 98 (mean) workers directly and between 8 (median) and 36 (mean) workers indirectly. This shows that, even in peak season, between 65 percent (mean) and 71 percent (median) of workers are directly employed and that at most around one-third of a company's workers are brought in through a gangmaster or agency (see Table 6). It must be noted that these averages are skewed somewhat by the fact that 36 percent of our respondents employed all of their peak season workers directly and used no gangmasters or agencies.

If one looks at the peak/low and direct/agency employment figures together a number of interesting features stand out. In our sample of 268 UK farmers, an extra 28,206 workers were used during peak season with almost 70 percent of these workers employed directly. Table 7 breaks down agricultural workers into four types according to the direct/agency and permanent/casual divisions: it shows just how important temporary employment is to UK agriculture. It also shows that casual employees are not inevitably sourced through labour market intermediaries/ gangmasters.

Table 4: Change in employment levels between peak and low season: mean and median averages

	Peak	Low	Difference
Mean	134	29	105
Median	40	9	31

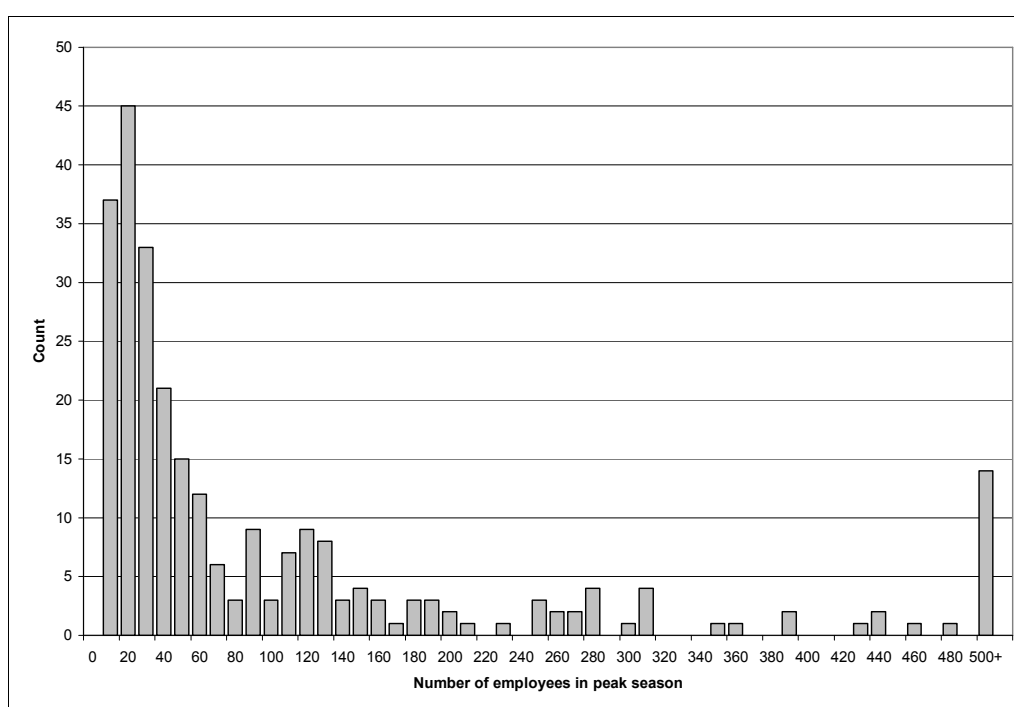
Source: (University of Liverpool and NFU survey 2008).

Table 5: The structure of employment in UK agriculture

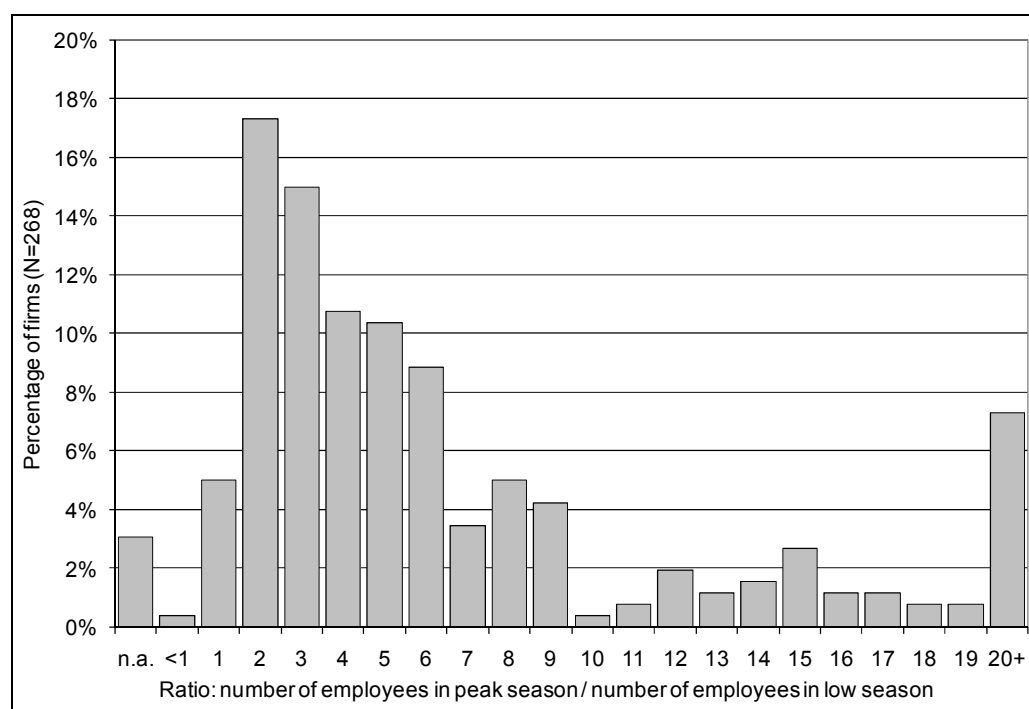
Number of Workers	% Respondents (N = 268)
1-50	56%
51-100	12%
100+	31%

Source: (University of Liverpool and NFU survey 2008).

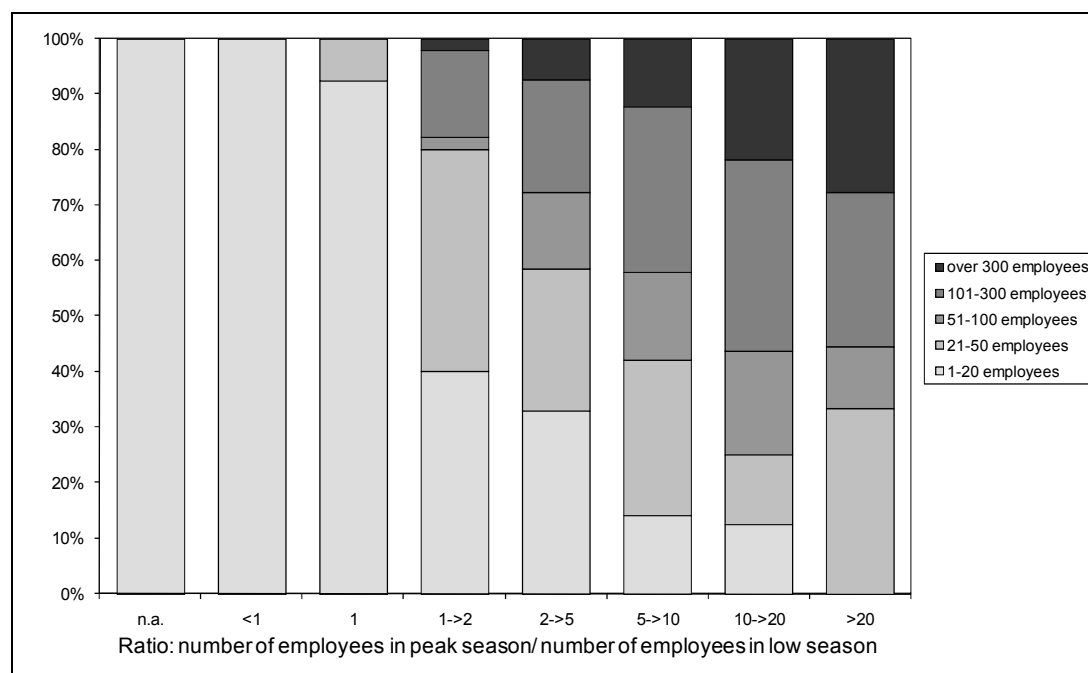
Figure 8: The range of peak labour demand in UK agriculture



Source: (University of Liverpool and NFU survey 2008).

Figure 9: Ratio of employees in peak season/ low season⁵

Source: (University of Liverpool and NFU survey 2008).

Figure 10: Ratio of employees in peak season/ low season by firm size⁶

Source: (University of Liverpool and NFU survey 2008).

⁵ n.a. refers to the eight companies who have no employees in low season. There was also a single response that indicated fewer total workers during their peak season (10 as opposed to 11).

⁶ Firm size relates the total number of peak season employees i.e. the maximum farm size in terms of employees within a given year.

Table 6: Importance of agency employment according to farm size

Number of Workers	% Agency per farm (N = 268)
1-50	36%
51-100	43%
100+	30%

Source: (University of Liverpool and NFU survey 2008).

Table 7: Four types of agricultural worker

	Percent	Total Workers (N=28,206)
Direct Permanent	3.5%	984
Direct Temporary	65.6%	18,492
Agency Permanent	1.7%	480
Agency Temporary	29.3%	8,250

Source: (University of Liverpool and NFU survey 2008).

In the survey, respondents were asked to reflect on the changing nature of the UK's agricultural labour markets over the last five years. Looking at the period 2003-2006, there was quite a balanced set of responses: 44 percent of farmers felt that it had become more difficult in this period to find workers; 23 percent noticed no real change; and 34 percent felt it had become easier to find workers. In contrast, in 2007, 85 percent of farmers felt that it had become more difficult to find workers; 13 percent noticed no real change; and only two percent felt it had become easier to find workers. Table 8 shows the different assessments given by respondents with regard to labour market conditions in UK agriculture over the two time periods (2003-2006 and 2007). The three most significant trends are as follows:

- 37 percent of farmers felt that over both time periods it had become harder to find workers;
- 31 percent of farmers felt that it had become easier to find workers in 2003-2006 but harder to find workers from 2007, and;

- 17 percent of farmers felt that there had been no change in 2003-2006 but that it had become harder to find workers in 2007.

The questionnaire also asked farmers to look beyond 2008 and give their views on future labour supply and demand. Table 9 contains these predictions. As with the data for 2003-2007, what stands out is the scale of the perceived problem of 'getting enough workers'; 92 percent of those surveyed expected recruitment of workers to become harder in the future. Given the data presented above, one must assume that this perceived problem relates to temporary workers within secondary agricultural labour markets (whether recruited directly or through intermediaries). An open-ended question (see Question 8 in Appendix 4) was asked about the potential impact of future labour shortages. The number of useable responses received was 231, and the content of response was equivalent to 11 A4 pages of text and over 5,500 words. A number of quotations have been included to illustrate the types of responses received (see Box 1).

Table 10 explores the type of issues agricultural employers have faced over the last five years with respect to recruiting suitable workers. Just over seven in ten (73 percent) survey respondents have faced seasonal shortages, and just under seven in ten (67 percent) believe there has been a decline in the attitude and ethic of workers. The picture is complicated by the fact that 11 percent of farmers have actually experienced labour surpluses, thereby cautioning against a broad-brush characterisation of UK agriculture. Interestingly, one-third of employers experienced specific skill shortages, suggesting that a skills-based agricultural immigration stream might be useful (whether or not these skills shortages would place migrants above Tier 2 of the new migration points system however, remains unclear).

Figure 11 examines these labour supply issues against crop type. One of the most notable findings is that seasonal shortages are particularly acute in the fruit sectors, with year-round shortages more acute in the salad and livestock sectors. There also appears to be a more favourable view of agricultural workers (work ethic and labour surplus) in the salad sector vis-à-vis the fruit sector. This may be due to the ability of the former to attract a higher calibre of workers through longer contracts and better pay and conditions. In other words, within agriculture, there may actually be employment hierarchies even for temporary workers; with certain crops /farmers able to offer better pay, conditions, and job security than others. Anecdotally, we heard that the soft fruit sector is the least desirable area of UK agriculture in terms of pay and job security and also the sector most at risk of a tightening labour market.

BOX 1: Illustrative examples of responses to the question: “If you expect to find it harder to fill vacancies over the next five-years, what will be the impact on your business?”

NEGATIVE

- It is going to push up the **cost of production**
- This will probably cause the business to be **unprofitable** as margins are already tight
- Have **reduced the size of the business** by 50 percent 2007-2008 because of the expected shortage of labour, the increasing cost of the seasonal labour, and no prospect of price increases
- May have to **stop growing labour intensive crops**
- **Move production overseas**
- This will result in **more being imported**
- It will affect our profitability and could **jeopardise full-time positions** within our business
- Struggle to compete with **supermarket demands**
- Present **staff will be expected to stretch themselves** further
- **Restricted growth** of the business
- **Inability to train** staff for the future
- I would have to **give up**. We are nearing retirement age and find it difficult to ‘put up a fight’ against problems
- **Extremely serious** – very little dedicated British casual labour (none locally at all)
- **Reduction in the area** of fruit and vegetables that we grow

POSITIVE

- We are investing in **better accommodation** and **production techniques** to improve worker retention
- We currently have ambitious plans to develop and expand our fruit growing capacity which are presently on hold due to the uncertainty surrounding the availability of seasonal labour. We need a **clear, positive and unhindered plan of intent from the government** to enable us to progress these plans with confidence
- More **mechanisation**.
- We are currently trying to achieve planning for a permanent hostel block in order to **offer a more ‘working holiday’ experience**
- Having to employ workers at much **higher wages**

Source: (University of Liverpool and NFU survey 2008).

Table 8: Trends in agricultural labour availability 2003-2006 and 2007

		2007			total (2003-2006)
		harder	no change	easier	
2003-2006	harder	97	13	5	115
	no change	45	15	0	60
	easier	83	6	0	89
	total (2007)	225	34	5	

Source: (University of Liverpool and NFU survey 2008).

Table 9: Expectations around future labour availability

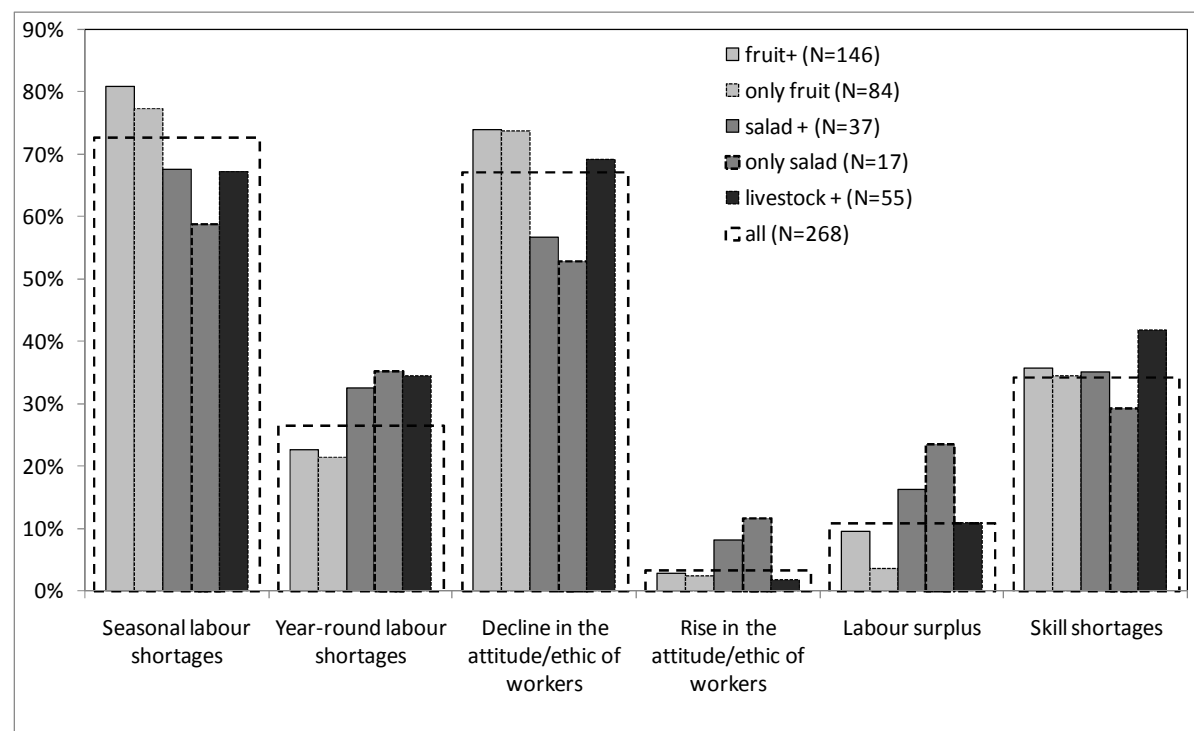
Predicted Availability	No.	%
harder	247	92%
easier	3	1%
cannot say	18	7%

Source: (University of Liverpool and NFU survey 2008).

Table 10: Types of labour supply issues experienced by UK farmers over the past five years

Issues faced over past five years	Percent of Respondents (N=268)
Seasonal labour shortages	73%
Year-round labour shortages	26%
Decline in the attitude/ethic of workers	67%
Rise in the attitude/ethic of workers	3%
Labour surplus	11%
Skill shortages	34%

Source: (University of Liverpool and NFU survey 2008).

Figure 11: Labour supply issues by crop type

Source: (University of Liverpool and NFU survey 2008).

2. Characteristics, dimensions and determinants of employer demand

Supermarkets have become a lever of social change, a source of social mobility. Not just in giving people more choice in what they buy, but in providing more jobs... Surely a society in which more people can afford quality food and products is a society that is progressing? (Sir Terry Leahy, Professor Sir Roland Smith Lecture, 5 February 2008).⁷

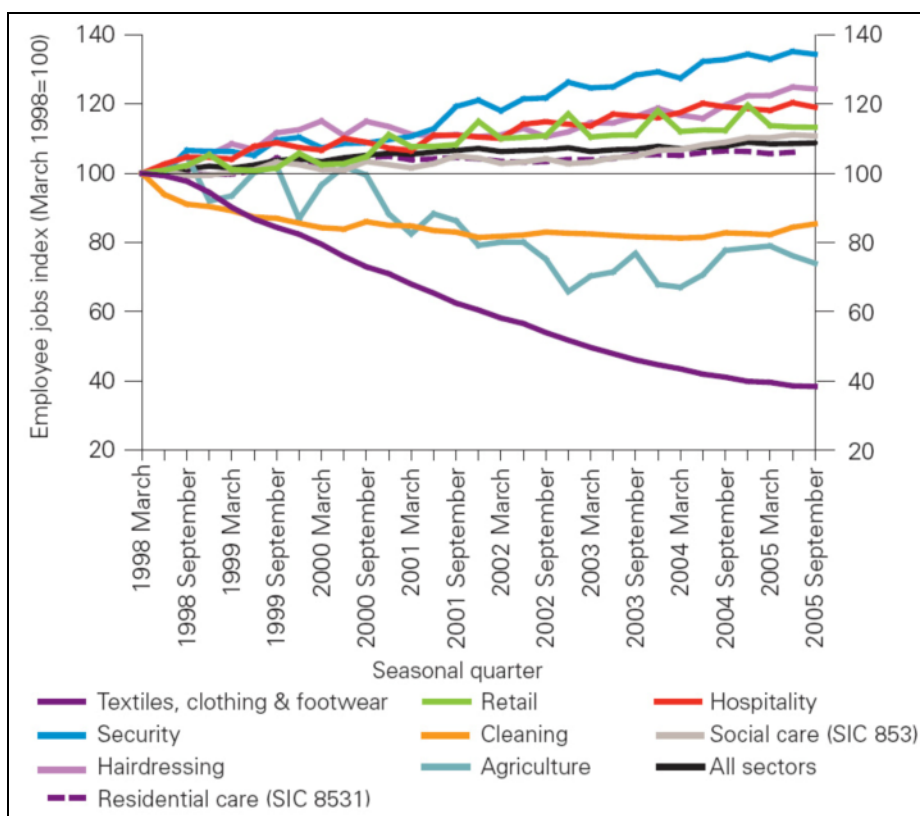
2.1 Weakening demand for agricultural labour

Very simply, and as the above section has shown, employment in UK agriculture has declined with less full-time permanent workers being demanded: the Annual Agricultural Census puts the current rate of decline in demand for workers at two percent per year. At the same time, employers are facing labour shortages related to their need for temporary workers. These shortages are particularly linked to labour-intensive crops which have a much higher demand for temporary workers than one would expect given their output value.

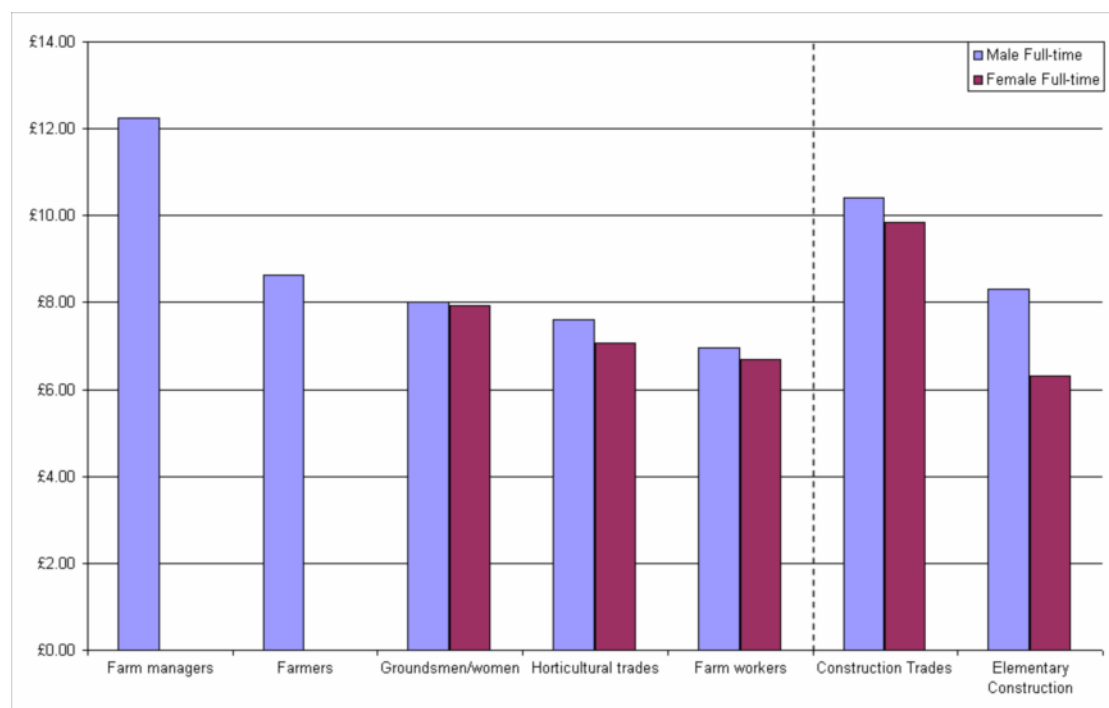
The most important indicator of this changing labour demand profile is productivity. The latest Defra estimates show that since 1973, productivity has grown by 52 percent, and the volume of outputs has increased by 20 percent, with the volume of inputs falling by 22 percent (Defra 2007c: 89). In other words, farms have become much more efficient and the reduced demand for labour is part of this streamlining process. This helps us to understand why, while demand for workers in most low-paid sectors of the UK economy has been growing over recent years (see Figure 12); demand for low-paid agricultural workers has declined. This makes the labour shortages we have identified even more interesting. Not only is UK agriculture characterised by a falling demand for workers, its relatively poor wage-bargaining position makes it hard for even a decline in demand to be met.

Construction is seen by most as the sector against which agricultural employers compete for low-skilled (in a formal educational sense) British workers, and as Figure 13 shows, average hourly wages for male farm workers are lower than those for construction workers. Furthermore, this comparison only looks at full-time workers; and if it were to include temporary agricultural workers' wages (where shortages are most severe) then the gap would be even greater.

⁷ Extract available at: <http://www.tescocorporate.com/page.aspx?pointerid=3FF3999324D141BABFC18E003CB02629>

Figure 12: Change in Employee Jobs in Low Paying Sectors, GB, 1998–2005

Source: (Low Pay Commission 2007: 21).

Figure 13: Average earnings per hour for full-time agricultural workers

Source: (Defra 2007a: 7)

Farmers' demand for workers is less than it has ever been and farmers' ability to compete for workers is also at an all-time low. Pressures for greater productivity explain this double squeeze on labour demand (see also Rogaly forthcoming). Furthermore, there is some evidence to suggest that demand may decline further as new labour saving machines are developed. The ability of farmers to use machinery to reduce labour demand depends, however, on a number of factors:

- certain crops have more potential for mechanisation than others: in the fresh herb sector, for instance, the consistency of drilled crops (like parsley and coriander) makes them much more amenable to mechanisation than less consistent herbs (like mint, rosemary and thyme);
- the costs of developing new labour-saving technology, allied with the tight margins most farmers operate under, means that only larger producers can afford to invest;
- cost-effective use of machinery depends on gaining economies of scale through large farm size, and so machine use on smaller farms is more costly as a proportion of turnover;
- for highly seasonal crops (like soft fruit), machine use would last for only a small part of the year and be relatively more costly, and;
- farmers depend on active external (university and industry) research and development to help them reduce labour demand.

2.2 Explaining weakening demand

Why does UK agriculture still need to reduce labour, and why are UK farmers in such a poor position to bid for the reduced labour they now need? Furthermore, why is the agricultural industry so heavily reliant on insecure forms of secondary employment; why can it not improve the pay and conditions of the work on offer? The macro-economics that surround the UK food industry help us to understand these demand-based questions. Notwithstanding recent record food price rises (for example, that caused the consumer price index to rise a record 6.6 percent in the 12 months to May 2008), the following statistics underline just how devalued fresh food produce has become relative to other goods and services in the UK economy:

- the price index for agricultural commodities declined by 47 percent in the period 1982-2000;
- the real prices for agricultural commodities is currently near a 30-year low (Defra 2006b: 13);

- since 1988, food prices have grown by 8.5 percent while overall price inflation has been 22 percent (Defra 2006b: 29);
- the proportion of the retail price a farmer receives has fallen from 47 percent in 1988 to 36 percent in 2005 (Defra 2006b: 28).

Food has become relatively very cheap and this explains why demand for labour has reduced, and why, when labour is needed, farmers are in a weak position to bid for it. In short, the UK has used cheap food and the migrant workers responsible for supplying it as part of a broader monetarist policy to keep inflation down (Blanchflower et al. 2007: 25; Work Foundation 2008) and make the public as a whole feel more affluent.

To survive the tightening conditions, UK farmers have had to adapt. They have followed trends first established in the United States involving a shift from the familiar, now bucolic, family farm to a less idyllic firm-based factory farm (for example, from craft to mass production). Anyone wishing to understand this shift would do well to consult the US literature (Martin 2002, 2003; Massey and Liang 1989; Taylor and Espenshade 1987; Taylor and Thilmay 1993). Californian agriculture in particular has been the 'laboratory' for the global agricultural system (Mitchell 1996). Its reliance on migrant labour is longstanding: first on Chinese and Japanese gang-based workers at the end of the nineteenth and beginning of the twentieth century respectively (Fisher 1953; Martin 2003: 28); then on Mexican farm workers through the *Bracero* (1942-1964) programme; and then through the Replenishment Agricultural Workers (RAW) and Special Agricultural Workers (SAW) programmes (that emerged from the 1986 Immigration Reform and Control Act) (Martin 2003: 36-50).⁸ Today, it is estimated that 75 percent of all farm workers in the US are foreign-born (Martin 2003: 1), rising to over 90 percent in California (Woods 2005: 38), with temporary contract-based labour the most migrant-dense (Vandeman et al. 1991).

UK farmers, like their counterparts in the US, face a particular dilemma with respect to how to meet the demand for seasonal harvest-based labour. Martin (2003: 196) explains the increasing reliance on migrant workers to address this dilemma as part of a shift in the structure of farming from a "family affair" to a "foreign affair." He argues that it is particular labour-intensive and seasonal sectors of agriculture that are most dependent upon migrant labour: fruits, nuts, berries; vegetables and melons; and horticultural specialities (Martin 2003: 9). Such products tend to cluster geographically: in California (for a case study see

⁸ The *Bracero* programme allowed 4.5 million Mexicans to enter the US. It remains the largest temporary programme in US history, and at its peak attracted 400,000 workers per year (Massey and Liang 1989).

Friedland 1981; Wells 1996); in Ontario (Basok 2002; Bauder 2006: Part IV); and in Eastern England (Scott et al. 2007)

Two main shifts are worth noting in respect to how UK (and global) agriculture has restructured:

1. Power has shifted from producers to retailers and consumers (Gereffi et al. 1994), and in the process it has become concentrated around a small number of multiple retailers and international suppliers (category managers). The result is that while people are more affluent, they are paying relatively less for their food to far fewer food retailers.
2. As the value of fresh produce has fallen, farmers have had to raise productivity. This has meant specialising in what they are best at (competitive advantage) and in increasing the scale of production (economies of scale). Farmers have also had to invest heavily in just-in-time production systems to ensure productivity through flexibility. Furthermore, because the margins are now so small, profit has become contingent on large turnover for most types of fresh produce.

These two trends have been associated with a costs squeeze and the “intensification of workplace regimes” in UK agriculture (Rogaly forthcoming) as farmers attempt to survive this squeeze. Flexible (largely migrant) labour is seen as one of the main outcomes of this. It is important to note, however, that farmers have always relied on flexible workers and that there are supply as well as demand issues behind the labour shortages.

In terms of how these trends have affected the British farmer we have seen the emergence of different “rural worlds” (Vorley 2003). Supermarkets, which control most of the agriculture in the UK by virtue of their market share,⁹ prefer dealing with a small and manageable number of suppliers and have, over the past few decades, focused on selected ‘category managers.’ These are large, often multi-national, companies that specialise in supplying particular agricultural products. They are likely to grow and/or process a lot of what they supply and will also use smaller farmers on a sub-contracting basis usually without any formal contacts in place. The system is tree-like: consumers are the myriad roots, supermarkets represent the trunk, with category managers the main branches, their

⁹ Multiples represent around 80-85% of the fresh food market in the UK (Competition Commission 2007a), and since 2000 the four largest grocery retailers have doubled their number of stores (Competition Commission 2007b: para 10) such that they now account for three-quarters of total grocery sales in supermarkets and convenience stores in the UK (Competition Commission 2007c: para 6).

suppliers or growers the smaller more distant outer reaches of the tree; permanent workers the evergreen leaves; and temporary workers the deciduous leaves.

2.3 Segmented labour markets

Irrespective of whether we are talking of a local farmer, a cooperative, or an international farming business, it is clear that agricultural employers in the UK are looking for a particular type of worker to do routine, repetitive, and physically demanding work at relatively low rates of pay and on insecure employment contracts. Alongside this, they also need a relatively small number of permanent staff. The secondary data reviewed above not only underlines how this applies as a general rule, but also shows how it is particularly pronounced in seasonal and/or labour-intensive sectors (especially general cropping and horticulture).

This pattern of demand has always existed (there have also been seasonal agricultural workers), but the scale of demand has grown as UK agriculture has become more productive, and as labour market flexibility has grown in line with this. The most useful academic concept that helps to understand the different types of agricultural labour demand is 'segmented labour market theory' (Massey et al. 1998: 28-34; Piore 1979). The theory argues that there are two main types of labour market: primary and secondary, and that companies can reduce labour costs by relying on secondary labour markets for lower-skilled tasks. Rogaly (forthcoming) argues that this is precisely what agricultural employers have done over recent years in order to survive the prolonged costs-squeeze imposed upon them by supermarkets.

Secondary labour markets are generally comprised of lower-paid and more flexible, temporary and seasonal forms of employment involving some of the least desirable 'dirty, dangerous, demanding' work. By virtue of its flexibility, the secondary labour market enables firms to pass the costs associated with peaks and troughs in business activity onto the worker (in slack periods workers are laid off: in busy periods more workers are hired). This makes firms more economically competitive but less socially responsible. As Piore (1979) explains:

The secondary sector constitutes a means of evasion: a sector of the labour market that is not subject to restrictions or lay-off and discharge to which the unstable portion of demand can be transferred (Piore 1979: 39).

In contrast, employment in primary labour markets is more secure and better paid. Demand for workers in UK agriculture seems to align very closely with this segmented labour market model.

3. Characteristics and segmentations of labour supply¹⁰

Many years ago we used a mix of locals, English students and SAWS students for harvesting. Locals have not been interested for about the last 10 years, and English students for the last 8 to 10 years (Survey respondent, Question 13).

3.1 Shifting supply

Labour supply into UK agriculture over the past two decades can be characterised as follows: a decline in the supply of domestic workers to fill permanent roles (mainly local men without qualifications); a decline in the supply of domestic seasonal staff (local mothers, benefit claimants, students, former mining and heavy manufacturing workers); a rise in the supply of temporary irregular migrant workers (Chinese, asylum seekers and failed asylum seekers)¹¹; and more latterly a rise in the supply of legal migrant workers (Portuguese, Polish and Lithuanian).¹² This latter shift occurred around the time of EU enlargement in May 2004 and caused, along with increased fines for employers of ‘illegal’ workers, the displacement of irregular migrants. Chinese gang labour, for example, disappeared from much of UK agriculture: displaced by legal eastern European workers (Pai 2008). This displacement was particularly pronounced in the cockle industry following the Morecambe Bay tragedy in February 2004 (Scott et al. 2007: 69-87).

¹⁰ It is not our intention to discuss here the supply-side explanations associated with agricultural labour migration that explain particular country-to-country migratory patterns. However, useful supply-side explanations of this ilk include: ‘Neo-classical’ concepts related to the economic gradient between sending and receiving country (Borjas 1989); and migrant ‘network’ concepts and the associated cumulative-causation explanations (Boyd 1989; Krissman 2005).

¹¹ In November 2002, for example, the Home Office established an ‘Illegal Working Group’; with the UK food industry represented through the involvement of the NFU, Marks and Spencer and J. Sainsbury. Furthermore, in 2004 a new system of fines was introduced for employers of illegal migrant workers (following on from the Morecambe Bay tragedy) and, in addition, many irregular workers were ‘regularised’ as a result of EU enlargement (estimates suggest that as many as 40% of A8 workers recorded as legally working in the UK after May 2004 were actually present in the country before enlargement, see for example, Ruhs, Anderson et al. 2006; Trades Union Congress 2004). The ‘regularisation’ process happened in reverse in 2000 when asylum seekers lost the right to work during the asylum decision process.

¹² Although note that the rise in migrant labour supply may have ended if the WRS data (Figure 16) and our survey respondents (Figure 11 and Tables 8-10) are accurate (see also Pollard et al. 2008).

The term 'labour shortage' (meaning when employers' demand for workers outstrips supply) helps us understand this shifting labour supply base over the past decade. However, labour shortages emerged when the level of total employment was declining and appear to have been particularly associated with secondary agricultural labour markets. According to the survey (University of Liverpool and NUF 2008), no major shortages were uncovered in the demand for permanent agricultural workers (in primary labour markets). There are two key questions of relevance to the shifting nature of agricultural labour supply. First, why are migrant workers willing to offer their labour to farmers to fill secondary labour market positions? Second, why do British workers now avoid these positions?

3.2 Willing migrant workers

In terms of the first question, three explanations stand out. First, migrant workers will accept relatively poor pay and conditions in the host country if they are able to transfer income to their home country, and if, in doing so, the value of their income increases (which depends on differential exchange rates and living standards) (Scott 2007). Second, migrants will accept relatively poor pay and conditions if they perceive their low-status employment to be temporary (for example, they see it as a platform for upward socio-economic mobility: a 'revolving door' rather than a 'dead-end' job) (Borjas 1985; Massey and Liang 1989; Pollard et al. 2008). Third, migrants will accept relatively poor pay and conditions because they have no other alternative (this is especially the case for irregular migrant workers: see Pai 2008).

Related to these three explanations is the question over the sustainability of using migrant labour to meet secondary labour market shortages. As Piore (1979: 2, 169) has observed:

The migrants themselves, who were initially accepting of wages and working conditions that native workers would not tolerate, have begun to resist these jobs, to organise for improvements in the workplace, and to pressure for access to more attractive job opportunities that natives do want.”...“In the early stages of migration, the foreigners tend to complement natives and their presence acts to preserve native jobs and the more advantageous job characteristics, especially those involving social status and security. It is only in the late stages of the process, when settlement occurs and the settled immigrants and their children begin to pressure for upward mobility, that the relationship between these more secure natives and the foreigners shifts from complementary to competition.

There are also questions over the extent to which the supply of migrant workers has enabled agricultural employment to remain relatively low-cost and low-status. Without migration, some argue that the 'revolving door' sustaining secondary agricultural labour markets would have stopped, and farmers would have been forced to improve their work offer. This is an argument advanced by Martin (2003), Bauder (2006), Rogaly (forthcoming) and others in relation to agriculture. It is also an argument that has been advanced more generally in relation to recent mass migration to the UK from Eastern Europe (Green et al. 2007a, 2007b; Stenning et al. 2006: 66-67).¹³

Much debate surrounds the question of whether labour migration into low-status sectors of the economy depresses the pay and conditions of native workers and whether or not the overall impact is positive or negative (see for example, Blanchflower et al. 2007; House of Lords 2008; Institute for Public Policy Research 2007, and; Work Foundation 2008). In our research on UK agriculture, we found that existing native farm workers are concentrated in primary labour markets, so are cushioned and tend to benefit from the impact of migration. However, for would-be native agricultural workers who would need to start off in secondary agricultural labour markets before proving their worth and moving up the job hierarchy, the impact of migration is to increase labour force competition. In other words, the impact of low skilled migration on a UK citizen depends upon the bargaining power that citizen has in the labour market. Given the perceived attitudinal problems over reliability, work ethic, deference, and so on of British workers - uncovered through our in-depth interviews with UK growers and processors – it seems that this increased competition is somewhat problematic for the most marginalised British citizens and may reduce the likelihood of them re-entering the labour market.

3.3 Unwilling British workers

The question of why British workers are no longer choosing agricultural careers and are no longer 'doing their time' in secondary labour markets before moving up the employment hierarchy is complex. As noted above, there may be an element of being out-competed by more educated, better motivated, and arguably more desperate and deferent migrant workers. In addition, and associated with this, British workers may simply be withdrawing from agriculture because the work offer is unsatisfactory relative to the work offer in

¹³ It is important not to get too carried away: agricultural employment has always been tough. In the 1970s, for example, Newby talks of work from 4am to 5:30pm six days per week (Newby 1977: 31) with "wages were not only low, but a large proportion of the agricultural labour force casualised and underemployed" (Newby 1987: 83).

competing low-status employment sectors (at the risk of over-generalising, for example, construction for men, and care and hospitality for women).

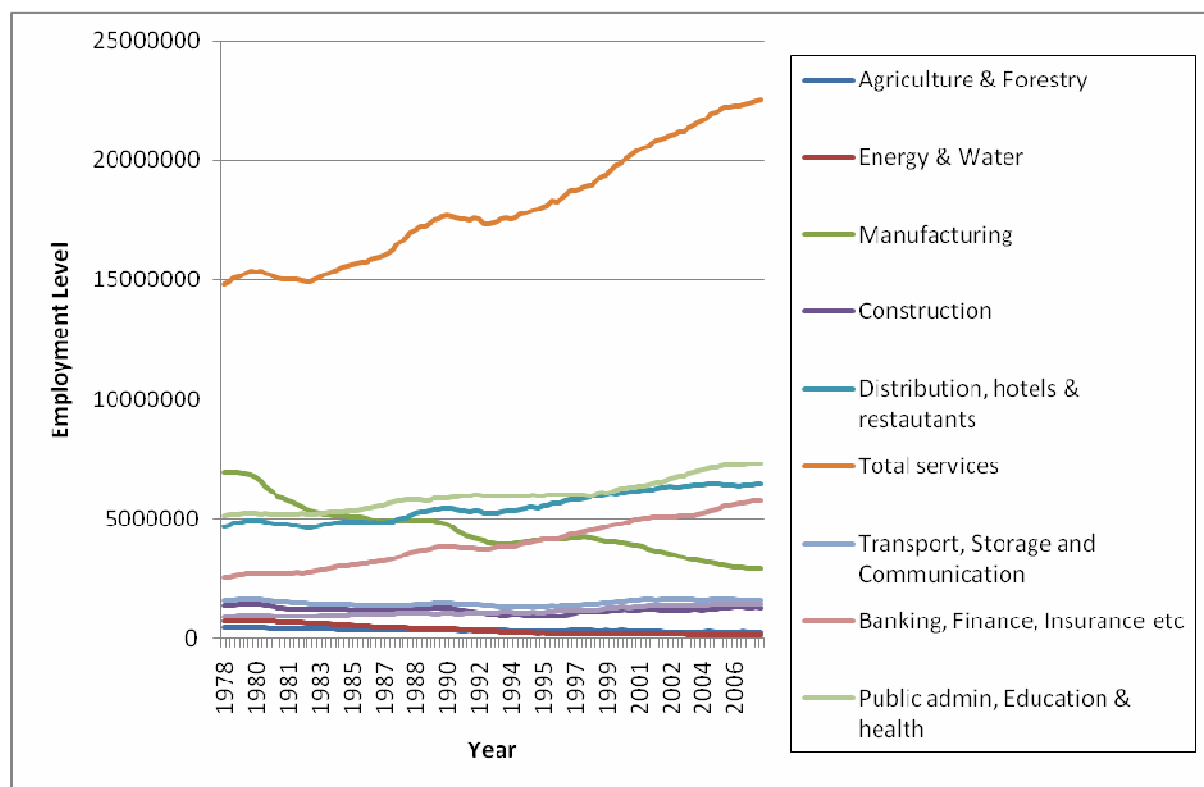
More broadly, the rural working-class (on which agriculture has always drawn), has declined substantially over the past thirty years. There is no longer the pool of temporary or permanent rural workers for farmers to access. Four post-war shifts are noteworthy in respect to this 'drying up' of the agricultural working-class:

- First, **agricultural workers are no longer in the majority** within rural areas as a result of both the influx of counter-urbanites, "the rural population today is generally older and more middle-class than it was 30 or 40 years ago" (Woods 2005: 72), and the long-term decline in total agricultural employment both in absolute terms and relative to other sectors (see Figures 3, 4, and 12);
- Second, farmers have shifted from adopting a paternalistic role with regard to their employees to adopting a more **distant and bureaucratic** role. This has been associated with the development of industrial farming or 'agri-business'; which has meant that the largely local and informal systems of social relations structuring agricultural employment have disappeared;
- Third, there has been an overall shift in the employment base of rural areas away from primary sectors and towards **service sectors**: seven in ten workers living in rural England are now employed in the service sector (Woods 2005: 62). Women in particular, who once supplied a significant proportion of seasonal labour, have been drawn into the service sector and away from agriculture (see Figure 14 but note Figure 2);
- Fourth, agricultural employment was once judged relative to other local employment opportunities: it is now judged against a national (even international) hierarchy of employment. This has meant the loss of local status hierarchies and informal social networks that once structured agricultural employment (see, for example, Monk et al. 1999) with farm work now being judged according to national and/or international 'attributional' criteria rather than local 'interactional' criteria (Newby 1977: 326). Thus, while in the past agricultural employment may have been low-paid it had a specific local social status. We have moved from a situation where farm work had a low 'economic' but high 'social' wage, to a situation where it now has both a low 'economic' and a low 'social' wage (Newby 1977, 1987).

The issue of declining domestic labour supply into low-status sectors of the economy was first recognised by the government in 2001 when it noted that there was “...unsatisfied demand at all skill levels in the labour market” (Glover et al. 2001: 50). The supply-side problem has continued since 2001, and has been exacerbated by continued demand-side pressures towards greater productivity.

The final two parts of the paper now examine the range of solutions that exist to tackle the demand and supply disequilibrium that exists in certain segments of UK agriculture.

Figure 14: Employment in UK Agriculture Relative to Other Sectors (1978- 2007)



Source: SIC Data 2008, authors own chart.

4. Immigration and labour demand

The economies of the industrialized world today depend on migration. Without migration and immigrant labour, the economies of North America and Europe would suffer or even collapse (Bauder 2006: 4).

Without migrant labour, the agricultural economy (of California) would be impossible as it now exists. Nor would the agricultural valleys of the state look anything like they do" (Mitchell 1996: 176)

While immigration may be a solution to the declining supply of agricultural workers, particularly in respect to secondary labour markets, it does little to address the causes of this declining supply. Furthermore, the government does not currently want low-skilled workers entering the UK from outside the EU (Home Office 2005: 16).¹⁴ Thus, immigration is at best a partial solution to agricultural labour shortages; albeit the most attractive and least-cost option for farmers.

There is a danger of seeing UK agriculture in isolation when in reality much of the developed world's fresh fruit and vegetable production is dependent upon immigrant labour:

- US agriculture has been heavily dependent on Mexican workers from World War II (Martin 2002, 2003; Mitchell, 1996).
- Canadian agriculture has drawn on workers from the Caribbean and Mexico since the 1960s: first through the 'Offshore' programme and then through the 'Seasonal Agricultural Workers Programme'. (Basok 2002; Bauder 2006: Part IV; Preibisch and Binford 2007)
- In the EU, Spanish agriculture is now reliant on migrants from North Africa (Hoggart and Mendoza 1999), and in Greece a substantial Albanian workforce has addressed the labour shortages that developed out of mass rural-urban internal migration (Kasimis and Papadopoulos 2005)

¹⁴ Unless a sector-specific labour shortage can be identified: "While the Government intends to phase out existing low-skilled migration schemes, we have listened throughout the consultation to the arguments for flexibility...Only where there is an identified shortage which cannot be met from within the UK or EU will a scheme under Tier 3 be set up" (Source: <http://www.workpermit.com/news/2008-01-22/uk/low-skilled-migration-suspended-new-points-based-system.htm>).

- Australia and New Zealand have been reliant on both retirees and working holiday makers from overseas (Hanson and Bell 2007). Both countries have also recently begun looking towards the Pacific Islands as a solution to address increasing agricultural labour shortages.

4.1 Worker Registration Scheme (WRS) data

In terms of the available statistical data, only SOC figures provide a breakdown of migrant workers by origin and occupation (Appendix 2, Table 1). However, these suffer from the problem of sample size, and also from the fact that they relate only to the aggregate national picture. To look at the micro geography of contemporary migrant employment in UK agriculture one can only use the Home Office's Worker Registration Scheme (WRS) data. The problem is that the WRS records migrants entering but not leaving the sector (meaning it is a cumulative total) and only relates to A8 workers (Polish, Latvian, Lithuanian, Estonian, Slovakian, Slovenian, Czech and Hungarian).

The WRS data (Figure 15) shows that A8 migrants are concentrated in a number of areas across the UK that largely mirror the concentrations of casual agricultural workers (see Figure 6); gangmasters (see Geddes 2008) and horticultural crops (Figure 7). Taking these four data sources and maps together, one can see that immigrant demand in UK agriculture is focused around nine 'clusters':

- | | |
|--|--|
| 1. The Wash (Lincolnshire, Cambridgeshire and Norfolk) | 2. Fyfe, Perthshire, Kinross and Angus |
| 3. Herefordshire and Worcestershire | 4. Kent |
| 5. West Lancashire | 6. Cornwall |
| 7. North Lincolnshire and Humberside | 8. West Sussex and Hampshire |
| 9. Suffolk | |

Interestingly, the latest WRS data, comparing 2005 with 2007 (see Figure 16), shows a decline in the flow of migrant workers to many of these clusters. This may suggest that: agricultural job vacancies have declined; that migrants are choosing not to work in UK agriculture (moving to other sectors and areas of the UK and/or other countries); or that migrants may be registering under more generic professions (and possibly still entering agriculture). The survey evidence around labour shortages suggests that the second

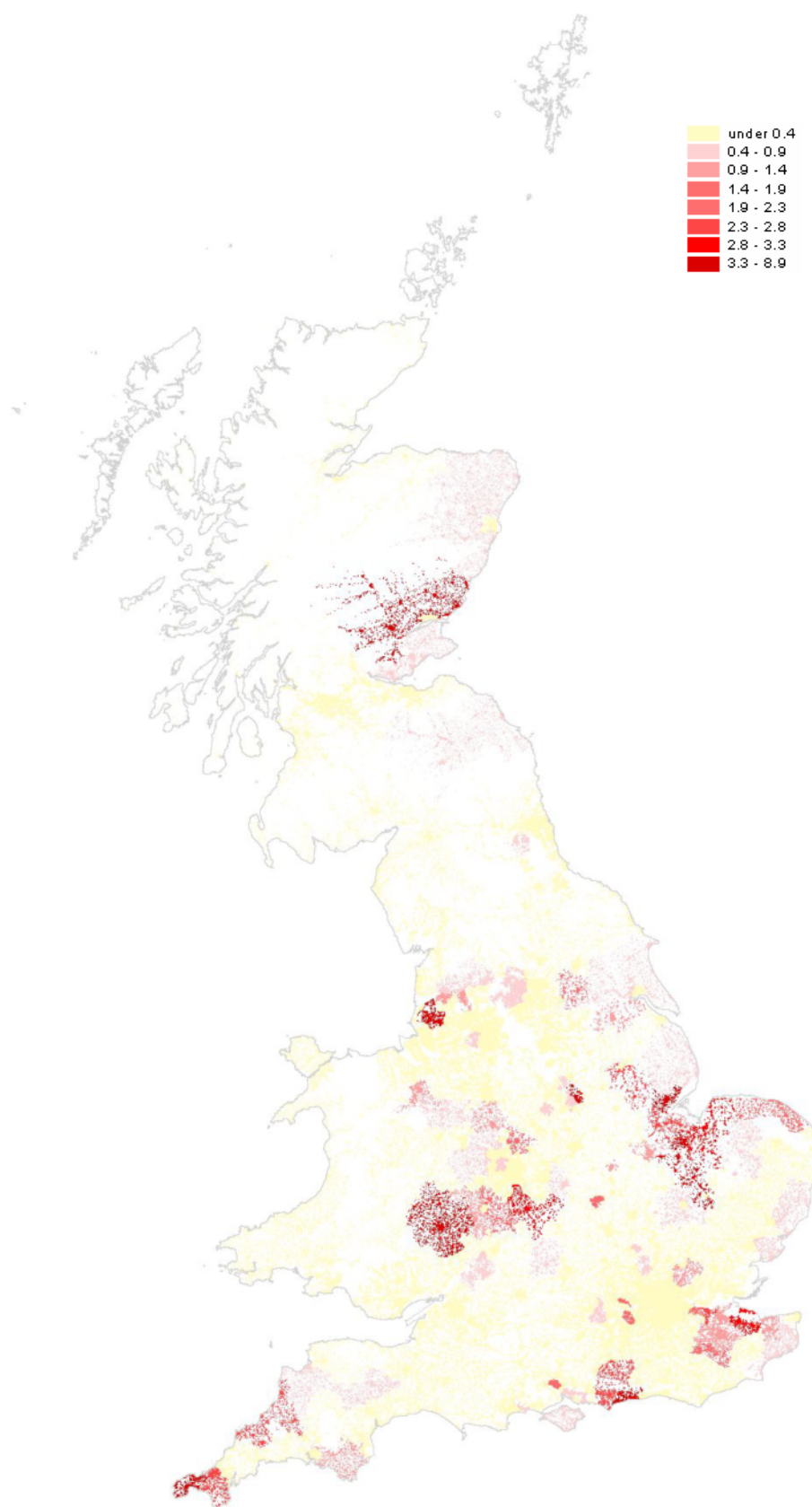
explanation (the decline in migrant supply to UK agriculture) is a particular issue at present (see also Pollard et al. 2007).

It is also possible to use the Home Office's WRS data to examine the link between agriculture and immigration at a local scale; specifically to examine the clusters in more depth. The counties around the Wash (Lincolnshire, Cambridgeshire and Norfolk) represent the most significant of the nine clusters identified. In examining WRS registrations for the 20 local authorities within the Wash cluster, we found that:

- Over one-quarter of the A8 workers in East Cambridgeshire (65 percent), North Kesteven (54 percent), East Lindsey (38 percent), Fenland (36 percent), King's Lynn and West Norfolk (31 percent), and South Cambridgeshire (30 percent) are employed in 'Primary Agricultural Work' (WRS codes 01 and 03)
- Over one-quarter of the A8 workers in Lincoln (70 percent), Boston (64 percent), Corby (64 percent), Peterborough (62 percent), Breckland (61 percent), Forest Heath (55 percent), South Holland (54 percent), East Northamptonshire (53 percent), Fenland (50 percent), Huntingdonshire (49 percent), King's Lynn and West Norfolk (46 percent), South Kesteven (44 percent), St Edmundsbury (40 percent), North Kesteven (33 percent), and Rutland (25 percent) are employed in 'Food Processing, Factory and Warehouse Work' (WRS codes 10 and 15).
- 'Primary Agricultural Work' (WRS codes 01 and 03) and 'Food Processing, Factory and Warehouse Work' (WRS codes 10 and 15) together account for 23 percent and 46 percent, respectively, of all A8 employees around the Wash.
- In 8 of the 20 case-study districts more than three-quarters of A8 migrants are registered in 'Primary Agricultural Work' (WRS codes 01 and 03) or 'Food Processing, Factory and Warehouse Work' (WRS codes 10 and 15).

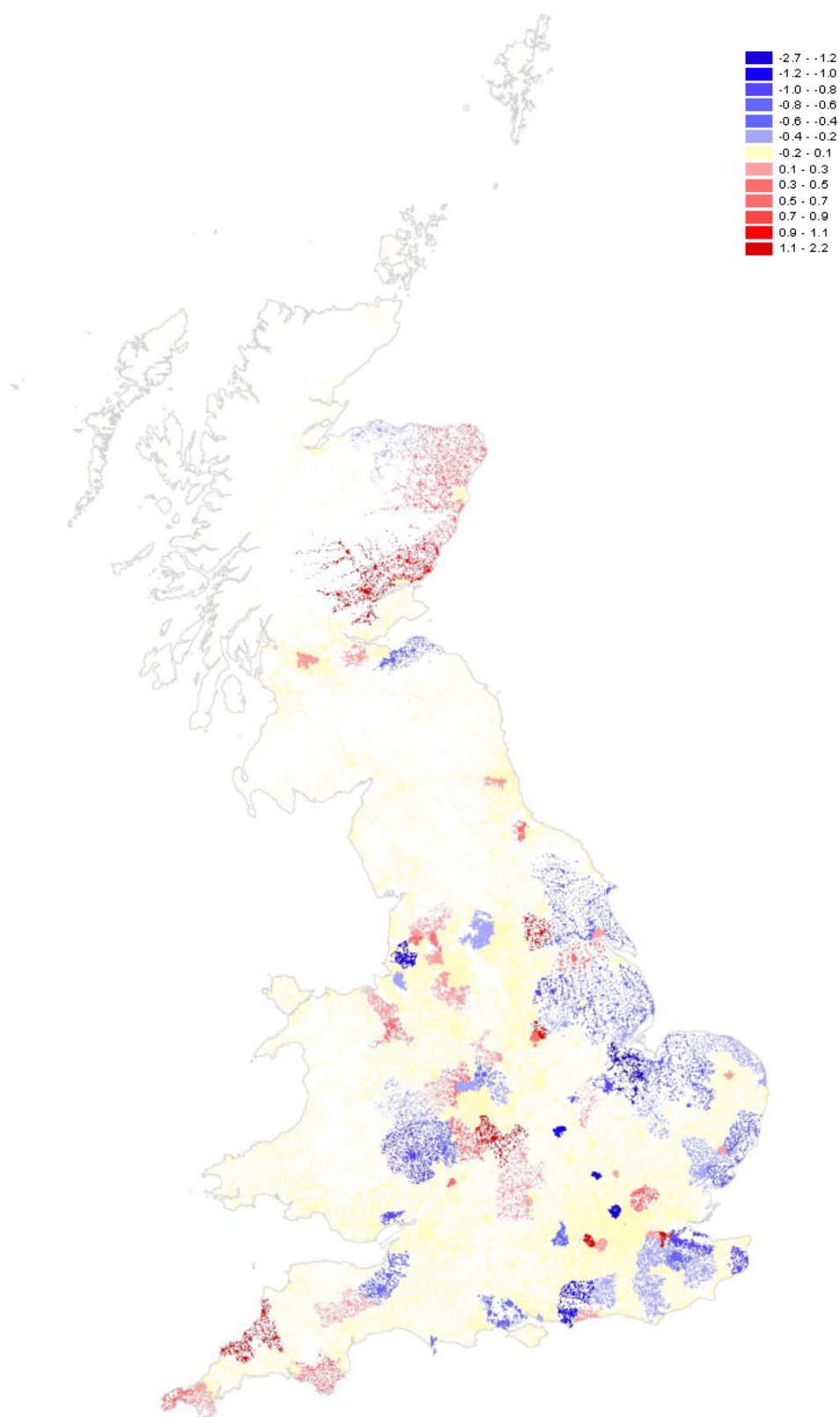
The relationship between the food industry and immigrant employment is clear (see Table 11). Moreover, the WRS data may actually under-report the significance of agricultural employment in that many employment agencies and gangmasters register workers under generic WRS codes because workers will move between a range of employers in different sectors.

Figure 15: 2007 WRS registrations in agriculture (per 1,000 population) at district level



Source: (Home Office 2008. Freedom of Information request)

Figure 16: 2005-2007 change in number of WRS registrations in agriculture (per 1,000 population) at district level



Source: (Home Office 2008, Freedom of Information request).

Table 11: Importance of ‘Primary Agricultural Work’ (WRS codes 01 and 03) and ‘Food Processing, Factory and Warehouse Work’ (WRS codes 10 and 15) for A8 migrants around the Wash.

% of A8 Employment explained by WRS Codes 01, 03, 10 and 15					
North Kesteven	87%	Corby	75%	South Kesteven	52%
Fenland	86%	East Cambridgeshire	74%	St Edmundsbury	51%
Boston	85%	Breckland	71%	South Cambridgeshire	44%
King’s Lynn and West Norfolk	77%	East Northamptonshire	62%	Melton	43%
Lincoln	76%	Huntingdonshire	61%	Rutland	26%
South Holland	76%	Forest Heath	59%	Cambridge	13%
Peterborough	75%	East Lindsey	58%		

Source: (Home Office 2007)

4.2 Survey data

In addition to the SOC and WRS data, the ‘Migration and Labour Shortage Survey’ (2008) asked businesses about their labour demand and the related importance of immigration. Table 12 shows how, as far as the peak season demand is concerned, only 16 percent of workers employed by survey respondents were UK born. This means that 84 percent of all peak season agricultural workers are migrants. One would expect migrant penetration of the sector to be more significant at peak season than at low season; even so, these figures are striking. To put them into historical context, Howard Newby’s (1977) classic study of British farm workers – still the most comprehensive available - shows how only 1.3 percent of agricultural workers at the time were born abroad and that 85 percent came from within the county in which they were working (Newby 1977: 157). In three decades there has been a dramatic shift from a local to an international agricultural workforce.

The survey also looked at whether firms of different sizes show differences in relation to their preference for migrant workers.¹⁵ The analysis (see Figure 17) shows that on average,

¹⁵ This question was inspired by previous Home Office research which found that agricultural employers are more likely to favour migrant workers than employers in other sectors of the UK economy: “Agriculture was the only sector in which employers expressed some preference for migrant workers, owing to labour shortages and positive migrant worker qualities. Only a minority commented that domestic workers were generally preferred...overall it was most important to have appropriate workers irrespective of migrant status” (Dench et al. 2006: 6). It is also worth noting that this preference for migrant workers can be country-specific, that this specificity can change over time, and that it is often connected to the legal status of different migrant worker groups (Preibisch and Binford 2007). Furthermore, employers rationalise their preference for migrants in both charitable terms

smaller farms are likely to employ relatively more UK workers and that larger farms are likely to employ relatively more migrant workers.

The survey also examined employers' preferences towards migrants in order to understand why such a high proportion of agricultural activity is now being performed by workers born outside the UK. Respondents were asked to list the advantages and disadvantages of the migrant workers they hire (see Table 13 for the results). The most important advantage that came through relates to the perceived work ethic of migrants.¹⁶ This factor accounts for 91 percent of all the advantages. According to the survey findings, advantages of employing migrants outnumbered disadvantages by a ratio of more than 2:1 and, on the whole, employers felt there were far more disadvantages associated with employing British workers than with employing migrant workers. The group of migrant workers most praised by employers were those on the Seasonal Agricultural Workers Scheme (SAWS) (see Box 2 for a discussion of this scheme).

Finally, employers were asked about the best solutions to address current and future labour shortages and skills gaps. Just under 80 percent of respondents felt that immigration (especially SAWS) had an important role to play (see Figure 18). In contrast, accessing British workers (for example by targeting the unemployed and/or going to local Jobcentres, colleges and universities) was not seen as a viable or widely used option. There therefore exists an entrenched positive relationship between employer demand and migrant worker supply within UK agriculture, and an entrenched negative relationship between employer demand and British worker supply.

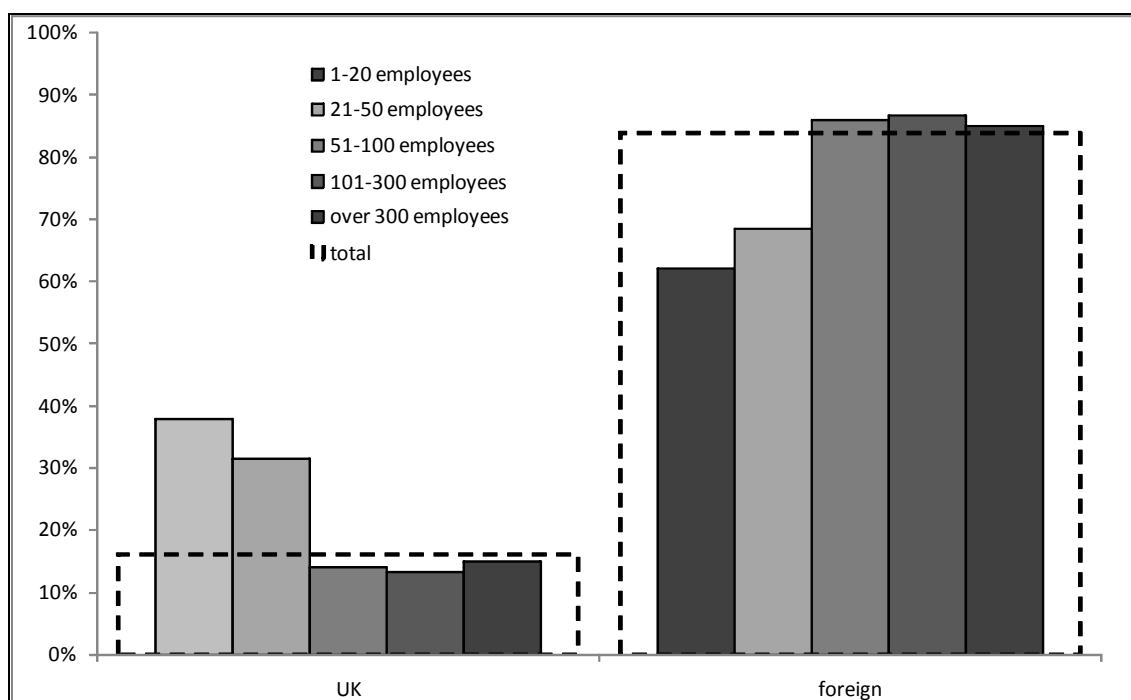
(Johnston, 2007) and as a response to the perceived shortcomings of domestic workers (Anderson et al. 2006; Dench et al. 2006; House of Lords 2008)

¹⁶ Words used by respondents in the survey that were included within the 'work ethic' category include: willing, hard, positive, committed, keen, reliable, available, flexible, polite, good, pleasant, loyal, honest, punctual, and happy 'worker'. Source: (University of Liverpool and NUS 2008).

Table 12: Origins of agricultural labour (peak season)

Origin	No.	%
UK	5,632	16%
A8	17,280	49%
A2	11,132	32%
Other	958	3%

Source: (University of Liverpool and NUS 2008).

Figure 17: Origin of farm worker by size of farm

Source: (University of Liverpool and NUF 2008).

Table 13: Employers views on the advantages and disadvantages of migrant workers

ADVANTAGES		DISADVANTAGES	
Work Ethic	533	Language	170
Education	22	Housing	52
Live on Site	16	Administrative	22
Youth	7	Training	20
Go Home After Season	5	Commitment/ Work Ethic	16
		Pastoral Care	7
TOTAL = 583		TOTAL = 287	

Source: (University of Liverpool and NUF 2008).

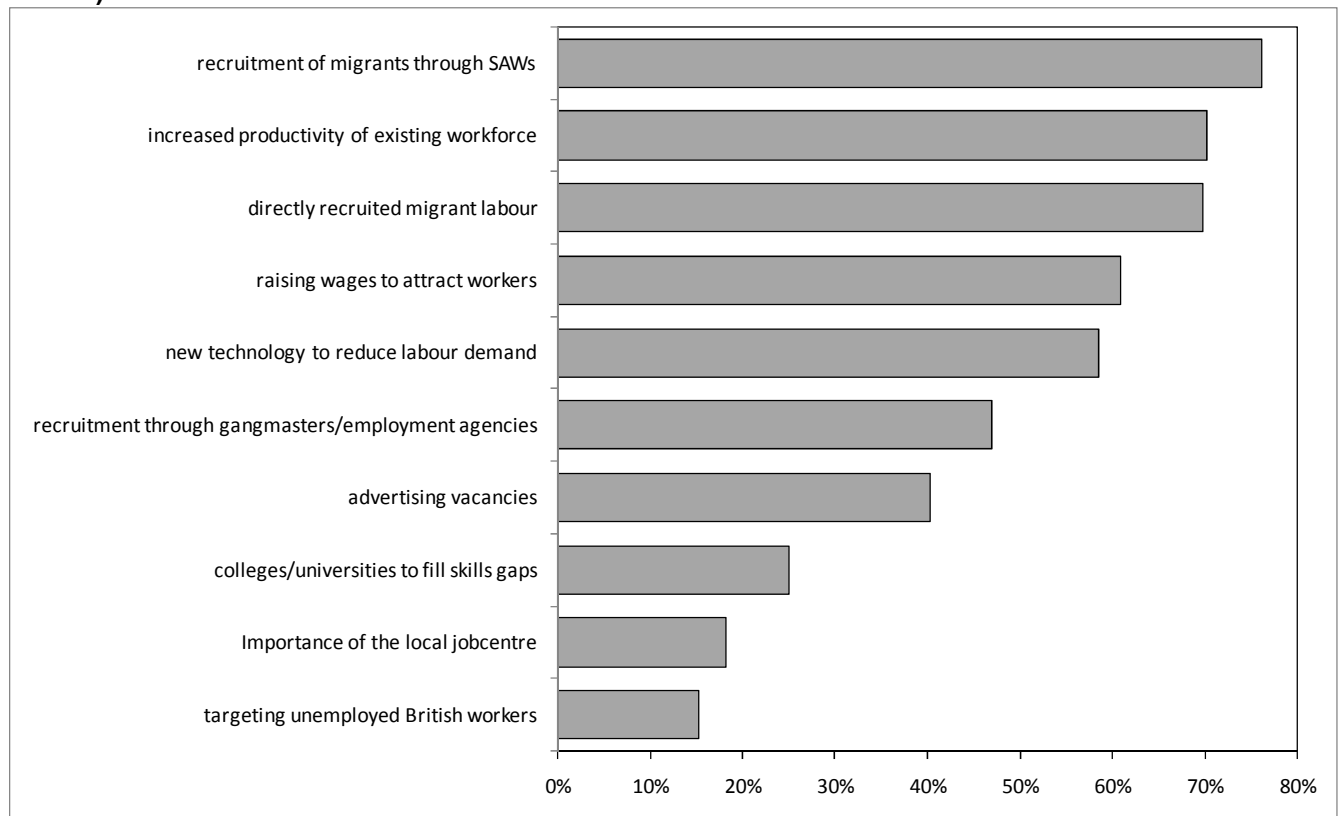
BOX 2: The Seasonal Agricultural Workers Scheme (SAWS)

Aware of the recent changes to SAWS, and its proposed phasing out (see Appendix 7), farmers were asked to share their views on the scheme. As Figure 18 makes clear, SAWS is seen by farmers as the most important solution to agricultural labour shortages: they do not want permanent staff but need temporary workers to meet peaks in their specific businesses output cycle. A significant 244 written responses were received relating to SAWS, equating to 16 A4 pages and over 9,000 words. The following are illustrative examples of the responses received:

- “The Government has confused immigration and the negative implications on the UK with the positive advantages of a well regulated SAWS system: which supplies a limited number of seasonal agricultural workers to fill a vital economic need. SAWS students contribute to our economy through paying Tax and NI, have no recourse on housing or our national health system [young and fit!], and spend money here, and then go home.”
- “Why fiddle with something when it is not broken? We desperately need seasonal labour in Agriculture and this scheme basically worked very well and did not contribute to illegal immigration. It has been caught in the crossfire of action to control immigration.”
- “The decision to exclude Ukraine, Russia, Belarus etc. From the SAWS programme has had a devastating effect on the number of Casual/Harvest workers available, particularly as these were, in most cases, the hardest working group and those most in need of the SAWS experience.”
- “We have operated under SAWS since its inception in the 1950’s it has been a fantastic scheme which has been well run over that period. The recent tinkering has led to a great degree of uncertainty which has dented our confidence in the future of our business. We desperately want to invest in the future of the fresh produce industry in this country but need the certainty of being able to recruit the casual labour which is so crucial to this process.”
- “Our foreign students work hard and earn every penny. They cost the community nothing and are an asset to the local area.”
- “The SAWS scheme gives us a quality of labour that we could only dream of sourcing within the UK. Our SAWS workers earn substantially more, on an hourly and total basis, than their UK counterpart. They are only viable because they are more productive. We have had no problem within the local community. At the end of each season we send back to their respective countries better ambassadors for the UK than ever the Foreign Office could conceive.”
- “We are losing a willing and happy workforce from Russia and the Ukraine for the sake of government/ European dogma.”

Clearly, employers give a particular perspective on SAWS. For balance it is worth reviewing some of the objections to temporary migration schemes like SAWS. Most revolve around two issues. The first relates to the way in which workers’ mobility and citizenship rights (for example, voting and welfare entitlement) have traditionally been restricted through very specific contracts. The second relates to the fact that workers are often accommodated by their employer or labour provider on-site. These two issues have led to suggestions that: 1) temporary workers are more vulnerable to exploitation; and 2) that employers and governments do not want to deal with the human dimension of the workers they so desperately need (Bauder 2006: 157-9, 194-5). Basok (2002), for example, argues that this form of migration creates a second-class of effectively ‘unfree’ labour (see also: Berger and Mohr 1975; Martin 2003). Furthermore, it is also argued that temporary migration channels can actually lead to greater levels of permanent, and often irregular migration as a culture of mobility develops (Massey and Liang 1989; Miller and Martin 1981; Plewa 2007). An assessment on the future of SAWS is provided in the concluding section of this paper.

Figure 18: Solutions to labour shortages used by UK farmers (% of all respondents/ N=268)



Source: (University of Liverpool and NUS 2008).

5. Alternatives

There are alternatives to the farm labour status-quo that would make farming profitable, raise farm worker wages, and still keep strawberries and lettuce affordable (Martin 2003: 6).

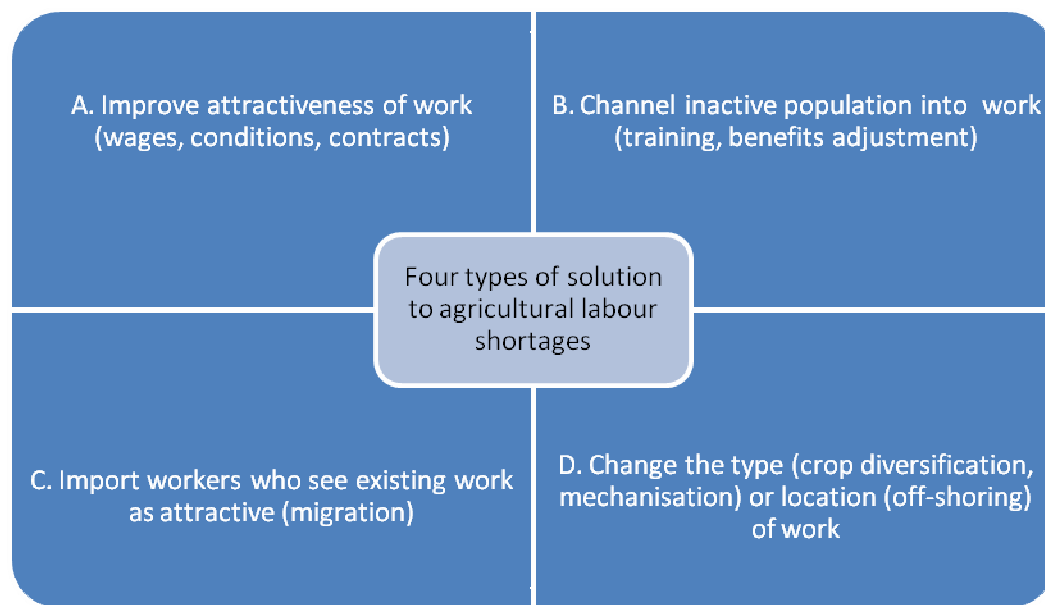
As the above quotation makes clear, migration is one of a number of solutions to agricultural labour shortages; which themselves are merely the symptom of, and constructed by, a broader structural dilemma at the heart of developed world economies. In terms of solutions to agricultural labour 'shortages', four broad types can be identified (see Figure 19). In the past these have generally combined to ensure that crops do not go un-harvested and that supermarket shelves do not run bare (at least in the developed world). Nevertheless, a number of farmers appear to feel that food shortages could occur over coming years because of seasonal labour shortages. The following quotation is illustrative of this concern:

Unless the numbers of Bulgarian and Romanian work cards are increased and Non-EU member countries allowed to apply for work under the SAWS scheme there is a serious risk to the security of nations food supply.¹⁷

The problem is that while immigration might be the most popular and economically favourable solution to labour shortages among UK farmers, its overall macro-economic impacts have recently been questioned and there is growing concern over the social and political consequences of immigration (House of Lords 2008). This part of the paper reviews the possible range of solutions to agricultural labour shortages that are open to the UK government and food industry over the short, medium and long-term. The section is divided into four parts, reflecting the division in Figure 19.

¹⁷ Where quotations are used for the remainder of the paper, unless otherwise indicated, they are drawn from the 'Final Comments' part of the University of Liverpool and NFU (2008) questionnaire.

Figure 19: Four Types of solutions to labour shortages in UK agriculture



5.1 Improve attractiveness of work

As Anderson and Ruhs (2008) make clear in this set of papers, ‘work’ is a socially constructed entity and experience, and the way in which it is constructed has a direct impact on the extent to which labour supply is able to meet labour demand. Presently, agricultural work is constructed in such a way as to create permanent demand-supply disequilibrium as far as temporary labour is concerned. Peaks in production require temporary staff because it is too costly for farmers to employ permanent workers for seasonal products, yet there are few people willing to accept the low pay and insecure employment on offer in agriculture’s secondary labour markets. The solution to labour shortages, at one level, is very simple: pay workers more and/or offer them more secure employment.¹⁸ The problem with this logic is also very simple: where does the money come from? It is not possible to have cheap food if expensive local resources have to be used to produce it.

By improving the agricultural work ‘offer’ farmers would reduce the size of their secondary labour market and thus prevent the ‘revolving door’ phenomenon that has been occurring; whereby agriculture is seen as a temporary sector of ‘last resort’ even for migrants. In the US, which has a much longer history of this agricultural ‘revolving door,’ a number of scholars have called for farmers to improve the attractiveness of the work they offer:

¹⁸ As Devins and Hogarth (2005) argue, the attractiveness of work relates not just to the crude wage paid, but also to the conditions and quality of the work on offer.

There are two major ways to supply irrigation water to crops: a field can be 'flooded' with water so that some trickles to each tree or vine, or fields can be irrigated with a drip system that involves laying plastic pipes on or under the rows and dripping water and nutrients to each tree or vine. If water is cheap, farmers flood fields with water; if water is expensive, farmers may invest in drip irrigation systems. The analogy to recruitment and retention is clear: farmers more often work collectively to flood the labour market with workers, usually by getting border gates opened or left ajar, instead of recruiting and retaining the best farm workers for their operation, the drip irrigation method (Martin 2003: 31).

Many farmers agree, and would like to see improved pay and conditions to tackle labour shortages. The following quotation reflects this attitude:

I believe it is largely/ wholly money related. If the primary producer was paid sufficiently for the products then in turn the wages paid could be higher. The work could command a greater degree of respect which would then attract people with more ability and then they could well be local Brits.

In terms of how much improvements would cost, estimates suggest that a 40 percent rise in farm labour costs would translate into a 2.4 percent increase in retail prices for a typical household (Martin 2003: 194).

Training and career development could be one dimension to the improved work offer beyond simply increasing wages and job security. This would help to address the major image problems that agricultural employment has in schools, and the lack of training or career-pathways leading British workers into agriculture. Nevertheless, the training or career-pathways will only exist if the resources are in place to support them. In terms of practical ways to move forward on this, three options are proposed:

1. Increase the attractiveness of temporary work and draw the secondary labour market closer to the primary labour market (for example, in May 2008 a Trades Union Congress and Confederation of British Industry deal gave temporary workers equal rights to permanent workers after 12 weeks employment);
2. Set up a working group made up of business, government, unions, and educators and trainers, to look into the feasibility of a training-based food industry career-path for British students who would not otherwise go to university;

3. Ensure that the public know how food prices are arrived at, for example, listing on the outer packaging of food the different components of the retail price (farm labour costs, input costs, transport and distribution, packaging and processing costs, and profit).

5.3 Channel inactive population into work

Even without making agricultural employment more attractive it may be possible to encourage the economically inactive population (for the example, the unemployed, long-term sick, retired, students, and housewives/househusbands) into farm work. Two possible benefit 'carrots' stand-out.

First, the government could look at ways in which those claiming benefit can be helped to engage in flexible forms of employment by having flexible signing-on systems. According to one source, these systems operated until the 1980s but were phased out (we were unable to confirm this with the Department for Work and Pensions). Other sources argued that: "seasonal harvest jobs should be free of NI [National Insurance] contributions for perhaps six weeks in a year and benefits should not be withdrawn for this period" and called on the government to "stop penalising (unemployed) people who want to earn a bit more" and to "modernise the housing benefit system" to support low-paid workers in rural areas.

Having said this, many survey respondents expressed concern over the quality of the inactive population: even for relatively low-skilled jobs. The following quotation was illustrative:

Trying to get local labour is just not practical. The last time we tried over 50 percent of those who arranged an interview did not turn up and of those who did show, nearly all of them were not suitable and gave the impression that they only went for the interview because they were forced by the job centre. Some people thought that an 8am start was too early and that weekend work would be impossible! (Source: respondent, University of Liverpool and NUF 2008).

Any adjustments to the benefit system, or support for the inactive population to work in agriculture, is likely to require some basic employability training and an acknowledgement that the readjustment from worklessness to an incredibly tough agricultural work regime will not be easy. The food industry as a whole (*inter alia* comprising retailers, processors,

distributors, caterers and farmers) could be encouraged to set up and collectively fund suitably paced 'back to work' re-integration and training schemes for hard to reach groups.

Second, the government could look at how social housing could be used to draw low-paid workers into rural areas (which are now much more middle-class and middle-aged than ever before). In the US, for example, owners and local residents in the Napa Valley (California) voted for an ordinance to treble the amount of housing for migrant workers in 2002 (Woods 2005: 263). No such cases are known of this happening in the UK: indeed house price affordability is a greater problem in rural areas than in urban areas while, paradoxically, agricultural pay is lower relative to pay in analogous low-status urban occupations. We did, however, note innovative worker housing schemes at the planning stage in centres of agency worker activity in Lincolnshire, but these were at a very early stage and were struggling to attract sufficient funding.

Some countries have also sought to adjust their benefit systems by using more punitive measures to force inactive populations into low-status and low-paid work. One of most famous benefit 'sticks' in this respect was developed in Ontario (Canada) in 1999 but was never actually implemented. It was known as 'Farmfare' and was designed to get the unemployed to work in seasonal agriculture as a substitute for migrant workers. Farmfare would have forced those claiming welfare benefits and able to work to make themselves available to farmers or risk losing their benefits. The element of compulsion drew objections from politicians and welfare groups who argued that the state should not sustain and support poor quality employment but instead should work to increase agricultural pay and job security (Bauder 2006: Chapter 11). The principal of forcing people to accept vacancies also has many practical problems. For instance, should people be made to take jobs that are dangerous or go against their moral, religious, or cultural views? Furthermore, should people be expected to move to where vacancies are available, and away from their established support networks, if such upheaval might exacerbate the reasons why they are inactive in the first place?

5.4 Import workers

Immigration has been the favoured solution to address labour shortages in UK agriculture for at least the past decade (and in the USA for at least the past century) and is now the favoured solution for hard-pressed farmers across the developed world (as mentioned above). Migrants, however, see agricultural employment as a temporary platform for longer-

term upward mobility. This creates a precarious 'revolving door' situation with respect to labour supply and the door can quickly slow or even stop. This is what appears to be happening at present:

The average skill level of migrant labour is falling. The best workers came first and have now moved up the ladder.

This summer (2008) is going to be a disastrous situation. Already our agencies are telling us they will not be able to supply 25 percent of what we asked for.

Migrant workers for us have traditionally been Polish! This resource is drying up. On my last recruitment drive in March 2008, instead of the 200 per day seeking work it was 40! Of these only 5 were suitable.

On a recent recruitment trip to Latvia earnings expectation has risen from £40/day last year to £50/day this year. My agent estimates we have no more than 3 years before we will be unable to attract workers from Latvia.

In the US, when companies were faced with less legal migrant workers they simply switched to irregular workers; facilitated, some academics have argued, by the US government turning a blind-eye to this (Cornelius and Tsuda 2004: 4-5). The danger is that this temptation could grow for UK producers if legal migration routes are not opened up:

The government has mixed up our requirements for seasonal staff with their overall policies on immigration and migration. The industry needs a secure source of labour. I can see the current government policy leading to more exploitation by rogue gangmasters and an increase in people working illegally.

What also occurred in the US, however, was an improvement in the work offer from agriculture in order to attract American citizens. At the same time, investment in technology increased as farmers looked to substitute variable capital (workers) for constant capital (machines) (Martin 2003: 192-196). As well as increasing the risk of irregular migrant workers, stopping immigration can therefore also lead to a virtuous employment circle:

Immigrant workers do not exist because there are 'arduous and badly paid' jobs to be done, but, rather, arduous and badly paid jobs exist because immigrant workers are present or can be sent for to do them (Castells 1975, cited in Bauder 2006: 3-4).

5.5 Change the type or location of work

Farmers can and do adjust to labour shortages by changing the type and location of their work. They can alter the crops they produce (shifting from labour to capital intensive crops: for example, from fresh fruit and vegetables to cereals), they can substitute variable capital (workers) for constant capital (machines), or they can switch some or all of their production to lower-wage economies.

In terms of the first solution, some of the producers we surveyed, who were involved in more labour-intensive horticulture, hinted that switching of production is likely if labour shortages continue:

Does the UK government want a fresh fruit and vegetable industry in this country? If not tell us and we will grow wheat instead, it is a lot less hassle!!

The supply of quality labour is becoming very hard to find and as a result demand will no doubt have to fall as we find ways to work around this problem. This is much easier to accomplish in the arable sector than any other: bring on remote control tractors!

While the long-term trend has been towards the rising importance of labour-intensive crops, especially horticulture and fruit (see Figure 5), the June 2007 census suggests a recent decline in these crops and (possibly related) growth in other forms of arable cropping, especially rape seed (Defra 2007b).

This logic applies both ways. In the US, for example, the amount of farmland used for labour-intensive crops increased when the flow of (largely irregular) migrant workers began again after a brief hiatus during the 1970s (Martin 2003). The questions for the UK government are whether it matters that certain labour-intensive and/or highly seasonal crops may eventually be unviable to grow *en masse* in the UK; and also whether it matters that farmers use cheap labour rather than investing in new technology.

The second solution centres on the development of new technology to reduce labour demand in agriculture. In many respects the most significant technological advancements have already taken place (for example, refrigeration, tractors, harvesters, sorting machines, packing products, fertilisers, and genetically modified crops) but new technology still has the potential to reduce the demand for labour. When the US stopped Mexican migrants entering California legally, by ending the *Bracero* programme (1942-1964), farmers began exploring the potential for new technology. One result was the development of a mechanised tomato harvester. The impact was immense: the number of farm workers required at harvest fell by 90 percent and the number of farms growing tomatoes dropped by 70 percent (due to the cost of the machine and the need for economies of scale¹⁹) (Martin 2003: 19, 194-195; see also Friedland et al. 1981: Chapter 4). More general evidence, also from the US, shows that cities with a higher migrant worker presence tend to support less capital intensive work; suggesting that the supply of cheap foreign labour may actually act as a disincentive to invest in new technology (Lewis 2006).

In the EU, a recent example of capital substituting labour occurred in summer 2007 when a Japanese company ('FANUC Robotics'), working with lettuce producer 'El Dulze' of San Javier (Murcia, Spain) installed 68 robots capable of processing 550,000 heads of lettuces per day. The immediate impact of this investment was a reduction in labour demand by 80 percent and a reduction in losses by 15 percent. The Managing Director of 'El Duze' explained the decision to invest in new technology:

This business has traditionally been labour intensive but today labour is increasingly unavailable. This region has a major shortage of labour (www.fruk.co.uk, accessed May 2008).

However, there are always constraints in terms of how much machines can actually do. For example, it is not possible to use machines to process all types of salad leaves (see Geddes 2008). Moreover, according to some sources, the harvesting of most types of lettuce (particularly for the higher value products) is still best done by hand.

¹⁹ The average farm size needed to support a full-time occupier has doubled every decade since the war (Newby 1987: 190).

The third solution is for farmers to shift some or all of their production abroad.²⁰ This raises a politically sensitive question over the extent to which the UK should be self-sufficient. Figures show that UK self-sufficiency has fallen from 84 percent to 72 percent in the decade from 1996 to 2006 (Defra 2006a: 30), and that the gap between agricultural imports and exports is rising (see Figure 20).²¹ It also raises the question of whether it is best to have companies importing cheap labour or relocating to where cheap labour is plentiful:

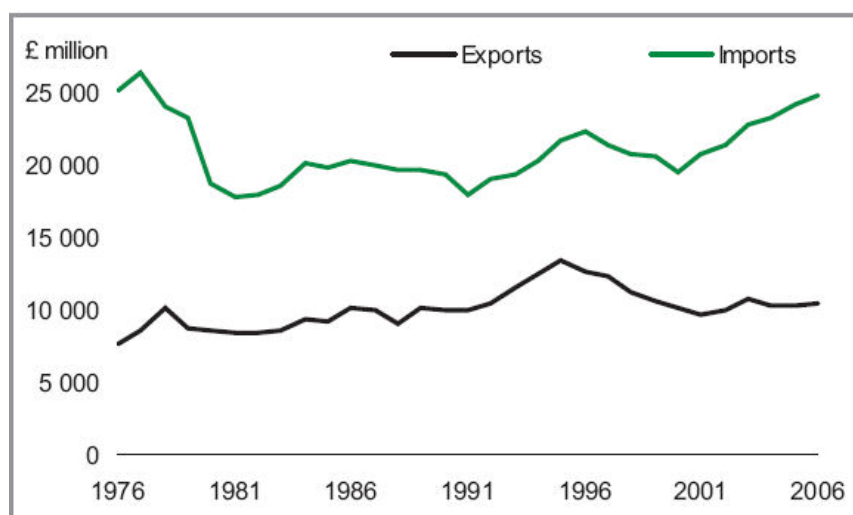
What would have happened had these low-skilled immigrants not come to California? Rather than producing apparel, packaged food, and fruit and vegetables for itself, California would have imported these items from elsewhere in the US and from other countries. Would low-wage workers in California have been better-off? Not necessarily. Without immigration, low-wage labour in California would still have faced competition. It is just that it would have occurred through the import of goods rather than through the import of workers (Hanson 2004: 89).

In the past we have seen much of the UK manufacturing industry face closure or relocate, having used migrant labour as a short-term survival strategy. The question is whether the labour-intensive parts of UK agriculture will head in the same direction, whether or not migration can or should be used to prevent this, and whether it is a genuine long-term solution?

Figure 20: The gap in UK agricultural imports and exports, 1976-2006

²⁰ At present, the most important countries in terms of agricultural imports to the UK are: France (13 percent), the Netherlands (12 percent), Irish Republic (9 percent), Germany (7.5 percent) and Spain (6.1 percent) (Defra 2007c: 67).

²¹ A growing gap between imports and exports does not necessarily imply that the UK is becoming less self-sufficient. It could simply relate to changes in the type and volume of food UK consumers are eating. The UK public might, for example, be eating more and/or eating seasonal products all-year round. This would, *ceteris paribus*, increase the gap between imports and exports but does not inevitably mean that the UK is becoming any less self-sufficient *per se*.



Source: (Defra 2007c: 67).

6. Conclusion

The movement of labour to gather and harvest must rank among the earliest and most enduring of all forms of human population movement (Hanson and Bell 2007: 115).

“It is often hard labour for him when he wields the plough with which he feeds all the world; locals, townsmen, and artisans. But if there were no peasant, our lives would be in a very sad condition” (‘Der Bauern Lob’, Hans Rosenplüt circa 1450, cited in de Botton 2004)

6.1 Restructuring demand

The key issue today with respect to low-status labour migration, which was also true between the 1950s and 1970s, is that it allows developed economies and their constituent businesses to avoid difficult restructuring questions. Immigration has undoubtedly helped UK companies remain competitive, but only over the short- to medium-term. The big question that now faces government is whether history is repeating itself for agriculture and, if so, what can (or what should) be done to address the industry’s structural labour shortages?

British manufacturers in the 1960s and 1970s could not improve wages and conditions because they were operating against lower-cost foreign competitors and eventually even the use of migrant workers proved futile. Similarly, even though many academics have called on farmers to improve the type of work they offer and to move away from a dependency on temporary migrant workers and secondary labour markets, it is difficult to see how this could be achieved within the current structure of the UK food system. The J. Sainsbury’s Chief Executive Officer (CEO) Justin King, for example, warned the 2007 National Farmers’ Union conference that consumers would not buy British “at any cost” and that supermarkets were not prepared to “prop up” UK farming. Thus, even though labour represents a very small portion (five to 10 percent) of the total cost of fresh produce, it is difficult to see how farmers could support an improvement in pay and conditions to attract more British workers without losing their market share to cheaper domestic and foreign producers.²²

²² One scheme currently seeking to address this dilemma is ‘Thanet Earth’ in Kent (Addley, 2008). This is a giant greenhouse complex being developed by ‘Fresca’ in order to offer improved employment through permanent year-round contracts, waist-high picking, and indoor harvest work.

The question of who is responsible for improving farm workers' wages and conditions is an incredibly thorny one. Multiple actors are involved, for example, government, supermarkets, international suppliers, small farmers, and consumers. Some of these actors have more power/resources than others; but to what extent should power be matched with responsibility?

Other than the costly task of improving the 'offer' associated with agricultural work, the literature also emphasises the potential role for altering the balance between the variable (labour) and the constant (machines) capital underpinning agricultural production. When labour costs rise, new technology becomes a more viable prospect and has the potential to eradicate the types of routine, physically demanding, and monotonous work that few people find rewarding (financially or psychologically). There are, however, two issues associated with this. First, there is a time-lag between identifying the need for labour saving technology, producing this technology, and convincing farmers to invest in it. Second, not all crops are amenable to mechanisation: soft fruit, for example, is incredibly fragile, is very difficult to harvest, and is highly seasonal. This makes investment in technology relatively unattractive for this particular crop.

Looking at the above solutions, ideally the recommendation would be to improve the pay and conditions of farm workers which would in turn stimulate investment in new technology. However, having interviewed farmers during the Gangmasters Licensing Authority and Nuffield research, and having canvassed their views in the University of Liverpool/NFU (2008) survey, it is not possible to see how farmers could restructure to remove the need for low-skilled, low-paid, and temporary or seasonal work, without considerable side-effects.

First, assuming transport costs do not become exorbitant, it is likely that more labour-intensive crops would shift to lower-wage countries and that farmers would invest in capital intensive arable farming in the UK. Second, any technological developments would be costly and require significant turnover in order to be economical. This suggests that there would be further consolidation if farmers were encouraged to substitute labour for capital, and also that the government might need to take an active role in initiating research and development. Third, in the first instance, any rise in the price of food production would have to be borne by producers because it is very difficult for farmers, as 'price takers', to pass costs up the supply-chain. This is likely to lead to further consolidation. However, given that

The scheme does, however, have geographical limitations in that it is climate dependent and involves a huge initial capital outlay.

farm workers' wages make up only a small proportion of the total retail price paid for food by consumers, it is unlikely that an increase in the price of labour, if passed up to retailers, would make a significant difference to consumers.

6.2 Improving supply

There are many hypotheticals in the solutions identified above and they are unlikely to solve the immediate labour shortages facing much of the UK's labour-intensive and seasonal agriculture. Notwithstanding the fact that these shortages are likely to have been exaggerated by farmers to a degree – the oversupply of labour is advantageous as it exerts a deflationary pressure on wages (Mitchell 1996: 84-85) – it is clear that shortages are an increasing issue for UK farmers both in terms of the quantity and the quality of workers. One solution is to increase the supply of British workers. This could be achieved by increasing pay, improving conditions, and thereby facilitating a transfer of workers into agriculture from other sectors of the economy. It could also be achieved by getting some of the UK's inactive population into employment. The problem here is that areas of the UK with the greatest supply of inactive labour are the major cities. There are issues, therefore, around access to work, and the commuting time and costs for an already deprived population. There are also other barriers:

- Agricultural employers do not look favourably on the inactive British and many have had very bad experiences of hiring them in the past;
- Many unemployed British may find it difficult to move from familiar urban areas and labour markets to unfamiliar rural areas and labour markets. This is likely to be exacerbated by the fact that they will find themselves in the minority as British-born workers within UK agriculture's secondary labour markets;
- There is also the issue of people's perceptions of agricultural work and its potential to offer a viable career-path (the British see agricultural work as a 'dead-end' option and this causes attitudinal problems).

Greater immigration is the other immediate solution to agricultural labour shortages but according to the University of Liverpool and NFU survey, it appears that migrants may have to be attracted from outside the EU in the coming years.²³ The fact that the appeal of farm work is diminishing, even for East European migrants, is worrying. Even more worrying for government is whether migrant agricultural workers from outside the EU will be needed and

²³ Notwithstanding the prospect of continued EU expansion (to include, for example: Croatia, Turkey, Serbia and the Ukraine).

how the balance of benefits (concentrated on a relatively small number of employers) and costs (spread across the population but especially concentrated on disadvantaged British citizens) will play out. There is also a related question over whether the government has a role in educating the British public and media as to why specific forms of low-status migration are essential to maintaining the standard of living.

If some form of migration from outside the EU is required in the short-term this assumes that business cannot persuade more EU migrants to come to the UK and/or inactive British workers cannot be supported back to work. In that case, a SAWS-type migration stream is the mechanism favoured by UK farmers.²⁴ Based on the experiences of SAWS (which is due to be phased out in 2010), it is recommended that an updated version have vocational training allied with the following:

- English language training (up to a minimum specified level);
- Established links between producers, foreign universities and UK universities;
- Possibilities for UK agricultural workers to be sent overseas on a similar exchange (as occurs, for example, with French agricultural students);
- Monitoring to ensure seasonal agricultural students are no less satisfied in terms of their work and accommodation than other workers in low-status occupations (for example via the Gangmasters Licensing Authority).

There are strong ideological objections to SAWS-type schemes as they create a second-class of citizen and worker. There are also more practical objections in the sense that they tend to lead to greater overall immigration in the long-run (the migrant network and cumulative causation hypothesis). Nevertheless, UK farmers currently have, and have always had a need for seasonal migrant workers, and it is difficult to see this need ever disappearing. If demand remains, and if the supply of UK workers remains low, then temporary migrant worker schemes may be the only answer, even in the long-run. There is no need for such a scheme to be geographically restricted: indeed developing two-way educational, cultural and work-based links between UK employers, universities, and workers/students outside the current EU27 is likely to bring a number of advantages to the agricultural sector and beyond.

²⁴ SAWS is not technically about 'migration' as a migrant is defined as someone living overseas for 12-months or more.

6.3 Immigration: solutions or symptom?

In conclusion, UK agriculture appears to be facing a structural dilemma and associated demand-supply disequilibrium that can be solved by a range of short, medium and long-term solutions. The dilemma is captured in the following quotation:

We have a requirement for 30 harvesting staff from May till October. At the moment we are down to 20. During this time we harvest mostly raspberries which need picking daily. To make a profit I must pick all my fruit and get the best price for it; margins are now very tight with minimum wage impacting at one end and fuel costs at the other. Since I can only get two-thirds of my labour I expect my turnover to be down by at least 25 percent this year. This will definitely lead to a loss and on a business which has invested in the latest growing techniques. If I cannot supply my customers they will get their fruit elsewhere. It has taken years to gain market share and it will be lost in one season...Once Supermarkets buy from abroad English growers will not be able to get back in. The government expected the shortfall to be made up by EU nationals but due to the weakness of the pound the EU nationals are staying at home. I now expect my turnover to drop from £350,000 to £260,000. I can't work the staff any harder because of employment law. I am totally hemmed in.

According to the survey, many farmers felt 'hemmed in.' They walk a tightrope of profitability, and migrant labour provides a vital source of balance on this tightrope. There are other sources of balance, but these are not as immediately viable (financially or practically). Nevertheless, farmers appear to recognise that over the longer-term, and in an ideal world, a range of balances are preferable to a one-dimensional reliance on 'revolving door' migration.

The key question is whether the government wants to open up new sources of migrant labour from outside the EU as one of these balances, and the extent to which it promotes others (for example, new technology, improvements in pay and job security, and greater activity rates among British citizens). Furthermore, the agricultural industry may well be forced to find its own sources of balance other than those listed earlier (for example, farms relocating overseas, greater consolidation within the industry, and crop diversification). Whatever the combination of solutions, it is important to distinguish between addressing

immediate labour shortages and addressing, over the longer-term, the causes of these shortages. In terms of the latter, it is really about those who control and profit most from the UK food system (consumers, supermarkets, and large international food suppliers) and developing a vision for the type of agricultural employment they want to reside over in future. Immigration is the cheapest and easiest option for both business and UK consumers. The question is what price business, consumers and the government are willing to pay if, collectively, they want to stop immigration because, very simply, we cannot have cheap British food without cheap British-based (if not British born) labour.

References

- Addley, E. 2008. "Welcome to Thanet Earth: is this a taste of future for UK agriculture?" In The Guardian, London.
- Anderson, B. and M. Ruhs. 2008. "A need for migrant labour? The micro-level determinants of staff shortages and implications for a skills-based immigration policy. A report prepared for the Migration Advisory Committee." London: Migration Advisory Committee (MAC).
- Anderson, B. et al. 2006. "Fair enough? Central and Eastern European migrants in low wage employment in the UK. A report prepared for the Joseph Rowntree Foundation.
- Basok, T. 2002. Tortillas and tomatoes: transmigrant Mexican harvesters in Canada. Montreal, McGill-Queen's University Press.
- Bauder, H. 2006. Labour Movement: How Migration regulates Labour Markets. Oxford: Oxford University Press.
- Berger, J. and Mohr, J. 1975. A Seventh Man. Harmondsworth: Penguin.
- Blanchflower, D.G., J. Saleheen and C. Shadforth. 2007. "The Impact of the Recent Migration from Eastern Europe on the UK Economy." London: Bank of England.
- Borjas, G.J. 1985. "Assimilation, changes in cohort quality, and the earnings of immigrants." Journal of Labour Economics 3(4): 463-489.
- Borjas, G.J. 1989. "Economic theory and international migration." International Migration Review 23(3): 457-487.
- de Botton, A. 2004. Status Anxiety. Penguin: London.
- Boyd, M. 1989. "Family and personal networks in international migration: recent developments and new agendas." International Migration Review 23(3): 638-670.

- Brass, T. 2004. "Medieval working practices? British agriculture and the return of the gangmaster." *The Journal of Peasant Studies* 31(2): 313-340.
- Competition Commission. 2007a. "Working Paper on Grocery Wholesalers. London: Competition Commission." Accessed at: <http://www.competition-commission.org.uk/inquiries/ref2006/grocery/index.htm>.
- Competition Commission. 2007b. "Groceries Market Investigation: Emerging Thinking." London: Competition Commission. Accessed at: <http://www.competition-commission.org.uk/inquiries/ref2006/grocery/index.htm>.
- Competition Commission. 2007c. "Working Paper on Buyer Power." London: Competition Commission. Accessed at: <http://www.competition-commission.org.uk/inquiries/ref2006/grocery/index.htm>.
- Cornelius, W.A. and T. Tsuda. 2004. "Controlling immigration: the limits of government intervention." In *Controlling Immigration a Global Perspective*, eds. W.A. Cornelius, T. Tsuda, P.L. Martin and J.F. Hollifield. Stanford: Stanford University Press: 3-48.
- Dench, S., J. Hurstfield, D. Hill and K. Akroyd. 2006. "Employers' use of migrant labour. Home Office Online Report 03/06." London: Home Office. Accessed at: www.homeoffice.gov.uk/rds/pdfs06/rdsolr0406.pdf].
- Department for Environment, Food and Rural Affairs (Defra). 2006a. "Food Statistics in Your Pocket." London: Defra.
- Department for Environment, Food and Rural Affairs (Defra). 2006b. "Agricultural Statistics in Your Pocket." London: Defra.
- Department for Environment, Food and Rural Affairs (Defra). 2007a. "Statistics Digest." April 2007. London: Defra.
- Department for Environment, Food and Rural Affairs (Defra). 2007b. "Survey of Agriculture and Horticulture: June 1st 2007." London: Defra/ National Statistics.
- Department for Environment, Food and Rural Affairs (Defra). 2007c. "Agriculture in the United Kingdom 2007." London: Defra/ National Statistics.

- Devins, D. and T. Hogarth 2005. "Employing the unemployed: Some case study evidence on the role and practice of employers" *Urban Studies* 42(2): 245-256.
- Fisher, L.H. 1953. *The Harvest Labour Market in California*. Cambridge: Harvard University Press.
- Friedland, W., A. Barton and R. Thomas. 1981. *Manufacturing Green Gold*. Cambridge: Cambridge University Press.
- Geddes, A. 2008. "Staff shortages and immigration in food processing. A report prepared for the Migration Advisory Committee." London: Migration Advisory Committee (MAC).
- Gereffi, G. and M. Korzeniewicz. Eds. 1994. *Commodity Chains and Global Capitalism*. London: Greenwood Press.
- Glover, S., C. Gott, A. Loizillon, J. Portes, R. Price, S. Spencer, V. Srinivasan and C. Willis. 2001. "Migration; an economic and social analysis. RDS Occasional Paper No. 67." London: The Home Office.
- Green, A., P. Jones and D. Owen. 2007a. "Migrant workers in the East Midlands labour market." Coventry: Warwick Institute for Employment Research, University of Warwick.
- Green A.E., D.W. Owen, P. Jones., C. Owen and J. Francis. 2007b. "The Economic Impact of Migrant Workers in the West Midlands, Report for a consortium of organisations in the West Midlands." Birmingham: West Midlands Regional Observatory.
- Hanson, G. 2004. "Commentary." In *Controlling Immigration: A Global Perspective*. Eds., W.A. Cornelius, T. Takeyuki, P.L. Martin and J.F. Hollifield. Stanford: Stanford University Press: 86-90.
- Hanson, J. and M. Bell. 2007. "Harvest trails in Australia: patterns of seasonal migration in the fruit and vegetable industry." *Journal of Rural Studies* 23 (2007): 101-117.

- Hoggart, K. and C. Mendoza. 2000. "African Immigrant Workers in Spanish Agriculture. The Centre for Comparative Immigration Studies, Working Paper 2." San Diego: University of California.
- Home Office. 2005. "Controlling our Borders: Making Migration Work for Britain. Cm 6472." London: The Home Office.
- House of Lords. 2007. "The Economic Impact of Immigration. Volume 1: Report" The Stationary Office: London.
- Institute for Public Policy Research (IPPR). 2007. "Britain's Immigrants: An Economic Profile." London: Institute for Public Policy Research.
- Johnston, D. 2007. "Who needs immigrant farm workers? A South African case study." *Journal of Agrarian Change* 7: 406-421.
- Kasimis, C. and A.G. Papadopoulos 2005. "The multifunctional role of migrants in the Greek countryside." *Journal of Ethnic and Migration Studies* 31(1): 99-127.
- Krissman, F. 2005. "Sin Coyote Ni Patrón: Why the 'Migrant Network' fails to explain international migration." *International Migration Review* 39(1): 4-44.
- Lewis, E.G. 2005. "Immigration, Skill Mix and the Choice of Technique. Federal Reserve Bank of Philadelphia Working Paper No. 05-08." Philadelphia. Available at: <http://ssrn.com/abstract=748324>
- Low Pay Commission. 2006. "National Minimum Wage." London: Low Pay Commission.
- Martin, P.L. 2002. "Mexican Workers and US agriculture: The Revolving Door." *International Migration Review*, 36(4): 1124-1142.
- Martin, P.L. 2003. *Promise Unfulfilled: Unions, Immigration and the Farm Workers*. Ithaca: Cornell University Press.
- Massey, D.S. and Z. Liang. 1989. "The long-term consequences of a temporary worker program: The US bracero experience." *Population Research and Policy Review* 8(3): 199-226.

- Massey, D. S., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino and J.E. Taylor. 1998. *Worlds in Motion: Understanding International Migration at the End of the Millennium*. Oxford: Clarendon Press.
- Miller, M.J. and P.L. Martin. 1981. *Administering Foreign Worker programs: Lessons from Europe*. Lexington: Lexington Books.
- Mitchell, D. (1996) *The Lie of the Land: Migrant Workers and the California Landscape*. University of Minnesota Press: Minneapolis.
- Monk, S., J. Dunn, M. Fitzgerald and I. Hodge. 1999. "Finding Work in Rural Areas: Barriers and Bridges. Work and Opportunities Series No. 13." York: York Publishing Services for the Joseph Rowntree Foundation.
- Newby, H. 1977. *The Deferential Worker: A Study of Farm Workers in East Anglia*. Harmondsworth: Penguin.
- Newby, H. 1987. *Country Life: A Social History of Rural England*. London: Wiedenfeld and Nicolson.
- Pai, H-H. 2008. *Chinese Whispers: The True Story behind Britain's Hidden Army of Labour*. London: Penguin.
- Piore, M.J. 1979. *Birds of Passage: Migrant Labour and Industrial Societies*. Cambridge: Cambridge University Press.
- Plewa, P. 2007. "The Rise and Fall of Temporary Foreign Worker Policies." *International Migration* 45(2): 3-36.
- Pollard, N., M. Latorre and D. Srisandarajah. 2008. "Floodgates or Turnstyles?" London: Institute for Public Policy Research.
- Preibisch, K. and L. Binford. 2007. "Interrogating Racialized Global Labour Supply: An exploration of the ethnic replacement of foreign agricultural workers in Canada." *The Canadian Review of Sociology and Anthropology* 44(1): 5-36.

- Rogaly, B. Forthcoming. "Intensification of Workplace Regimes in British Horticulture: The Role of Migrant Workers." *Population, Space and Place*.
- Ruhs, M., B. Anderson, B. Rogaly and S. Spencer. 2006. "Changing Status, changing lives? Methods, participants and lessons learnt." Oxford: Centre on Migration, Policy and Society. University of Oxford.
- Scott, S. 2007. "Coming in from the cold: Transition in Eastern Europe and labour migration to the UK." *Teaching Geography* Autumn 2007: 116-120.
- Scott, S., A. Geddes, K. Nielsen and P. Brindley. 2007. "Gangmasters Licensing Authority: Annual Review." Nottingham: Gangmasters Licensing Authority/Defra. Available at: <http://www.gla.gov.uk>.
- Stenning, A., T. Champion, C. Conway. M. Coombes, S. Dawley, L. Dixon, S. Raybould and R. Richardson. 2006. "Assessing the Local and Regional Impacts of International Migration. Report prepared for the Department for Communities and Local Government." Newcastle upon Tyne: Centre for Urban and Regional Development Studies Newcastle University.
- Taylor, J.E. and T.J. Espenshade. 1987. "Foreign and undocumented workers in California agriculture." *Population Research and Policy Review* 6(3): 223-239.
- Taylor, J.E. and D. Thilmany. 1993. "Worker turnover, farm labour contractors, and IRCA's impact on the California farm labour market." *American Journal of Agricultural Economics* 75(2): 350-360.
- Trades Union Congress. 2004. "Propping up rural and small town Britain: Migrant workers from the New Europe." London: European Union and International Relations Department, Trades Union Congress.
- Vandeman, A., E. Sadoulet and A. de Janvry. 1991. "Labour contracting and a theory of contract choice in California agriculture." *American Journal of Agricultural Economics* 73(3): 681-692.

Vorley, B. 2003. "Food Inc. Corporate Concentration from Farm to Consumer." London: UK Food Group/ International Institute for Environment and Development.

Wells, M. 1996. *Strawberry Fields: Politics, Class and Work in Californian Agriculture*. Ithaca: Cornell University Press.

Woods, M. 2005. *Rural Geography*. London: Sage.

Work Foundation. 2008. "Migration Myths." London: The Work Foundation.

APPENDIX 1: Overview of SIC and SOC Codes

Standard Industry Classification (SIC): “Type of Work”

SIC data is available through the National Statistics’ ‘Annual Business Inquiry’ (ABI) (see: <http://www.statistics.gov.uk/abi/default.asp>). It classifies business establishments and other statistical units by the type of economic activity in which they are engaged. The classification provides a framework for the collection, tabulation, presentation and analysis of data, and its use promotes uniformity.

The SIC classification breaks down work into 17 main categories. These are: Agriculture and Forestry (1); Fishing (2); Mining and Quarrying (3); Manufacturing (4); Electricity, Gas and Water Supply (5); Construction (6); Wholesale and retail trade, repair of motor vehicles, motorcycles and household goods (7); Hotel and Restaurant (8); Transport, Storage and Communication (9); Financial Activities (10); Property development, renting, Business and Research Activities (11); Public Administration and defence, Social Security (12); Education (13); Health and Social Work (14); Other Community, Social and Personal Service Activities (15); Private Households with Employed Persons (16), and; International organisations and Bodies (17).

SIC is hierarchically structured so that each of the above 17 codes can be further broken down into two more levels of detail. An example of these three-tiers is contained below:

Tier 1: ‘01: Agriculture and Forestry’

Tier 2: ‘01.1: Growing of crops; market gardening; horticulture’

Tier 3: ‘01.11: Growing of cereals and other crops not elsewhere classified’

In terms of mapping, the two-digit categorisation (Tier 1) is available from Ward level.

The SIC category relevant to this chapter is ‘Agriculture and Forestry (1)’. This is broken down into nine Tier 2 categories:

1. Agriculture and related activities
2. Growing of crops; market gardening; horticulture
3. Farming of animals
4. Growing of crops combined with farming of animals (mixed
5. farming)
6. Agricultural and animal husbandry activities, except veterinary
7. activities
8. Game propagation including related activities
9. Forestry, logging and related activities

Furthermore, some farmers engage in primary processing activity on-site, and so would support employment in the Manufacturing (4) category and specifically sub-section of ‘Food Products and Beverages’ (4.1).

Standard Occupational Classification (SOC): “Status of Work”

The SOC classification breaks down into nine main categories. These are: Managers and Senior Officials (1); Professional Occupations (2); Associate Professional and Technical Occupations (3); Administrative and Secretarial Occupations (4); Skilled Trades Occupations (5); Personal Service Occupations (6); Sales and Customer Service Occupations (7); Process, Plant and Machine Operatives (8), and; Elementary Occupations (9).

The SOC categories relevant to this paper span a range of occupational categories. The ones that are directly relevant to agriculture are contained in Appendix 2, Table 1, although there are also more generic SOC codes that are likely to be important in relation to farm-based employment but that are not explicitly agricultural in nature. The Office for National Statistics (ONS) publishes SOC data in its 'Annual Survey of Hours and Earnings' (ASHE) (see: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15050>). This also contains data for SIC codes.

APPENDIX 2: Additional Illustrations

Table 1: Employment in Selected Four-Digit Agricultural-Type SOC Occupations (N=353 Occupations) by Country of Birth

SOC Codes	UK born	EEA (not A8 or Bulgaria/Romania)	A8 countries	Bulgaria and Romania	Non-EEA	Number	Median Gross Hourly Pay ²⁵	Mean Gross Hourly Pay
1211 Farm managers	96.1	1.8	0.0	0.4	1.8	282	£11.97	£12.47
1219 Mngr anml hsbndry, frst, fish nec.	98.2	1.8	0.0	0.0	0.0	170	N/A	£12.13
5111 Farmers	98.6	0.7	0.0	0.0	0.7	1,209	£8.01	£8.78
5112 Horticultural trades	95.1	3.3	0.0	0.0	1.6	245	£7.52	£8.24
5119 Agricult and fishing trades n.e.c.	95.0	2.0	0.0	0.3	2.6	343	£8.38	£9.26
8111 Food, drink & tobac process operat	72.4	2.3	10.0	2.1	13.2	1,902	£7.50	£8.28

²⁵ From the Annual Survey of Hours and Earnings (AHSE) 2007. See: http://www.statistics.gov.uk/downloads/theme_labour/ASHE_2007/2007_occ4.pdf.

8223 Agricultural machinery drivers	91.9	1.2	4.7	0.0	2.3	86	£8.00	£8.47
9111 Farm workers	96.7	1.3	1.5	0.0	0.6	687	£7.04	£7.42
9112 Forestry workers	91.9	2.7	0.0	0.0	5.4	74	£8.80	£8.93
9119 Fishng & agric reltd occupatns nec.	94.1	2.4	0.7	1.7	1.0	290	£6.58	£7.13
9134 Packers, bottlers, canners, fillers	60.3	3.0	16.6	4.0	16.1	1,496	£6.86	£7.48

Source: (Labour Force Survey 2006/07).

Table 2: Breakdown of changing agricultural employment levels 2005-2007

	June 2005	June 2006	June 2007	% change 2007/2006
Total labour force	364.9	361.0	353.1	-2.2
Farmers, business partners, directors and spouses	223.0	223.8	219.0	-2.1
Full time	97.9	96.7	91.8	-5.1
Part time	125.1	127.0	127.2	0.2
Salaried managers	15.4	14.3	15.0	5.3
Full time	11.0	9.8	10.3	4.8
Part time	4.4	4.4	4.7	6.2
Other workers	126.5	123.0	119.0	-3.2
Full time	50.5	46.8	45.3	-3.3
Male	42.3	38.9	37.6	-3.3
Female	8.2	8.0	7.7	-3.4
Part time	29.7	28.4	31.4	10.4
Male	15.9	15.2	18.1	18.7
Female	13.7	13.2	13.3	0.9
Seasonal, casual and gang labour	46.3	47.7	42.4	-11.2
Male	30.6	30.6	27.4	-10.4
Female	15.7	17.1	14.9	-12.7

Source: Agricultural Census/Agricultural Survey (Defra 2007b).

Table 3: Labour Use by Output Type, England, 2006

	Permanent	Temporary	% Temporary	Total
Cereal	10,967	4,042	27%	15,009
General Cropping	10,954	15,645	59%	26,599
Horticulture	16,474	14,056	46%	30,530
Pigs	1,342	192	13%	1,534
Poultry	4,056	989	20%	5,045
Dairy	9,605	2,402	20%	12,007
LFA – Grazing Livestock	2,692	1,787	40%	4,479
Lowland – grazing Livestock	6,042	3,505	37%	9,547
Mixed	7,395	2,551	26%	9,946
Other Types	5,724	2,550	31%	8,274
All	75,250	47,718	39%	122,968

Source: (Defra 2007: 21).

APPENDIX 3: Survey Sampling - Explanatory Note

The survey was sent out on 15 April 2008 to the British farming community via the National Farmers' Union (NFU). The complete survey is contained in Appendix 4. A list of the sectors represented by the survey respondents appears in Appendix 5, and their geographical spread across the UK according to the different types of agricultural land-use is shown in Appendix 6. Farmers had 10 days, until 25 April 2008 to respond to the survey. A total of 268 useable responses were received.

Potential respondents were informed of the purpose of the survey for ethical reasons, in particular, to be clear and open about who the end users would be (in particular, the Home Office and Migration Advisory Committee). This is likely to have increased the survey response rate among farmers with specific labour needs. The survey should still be seen as representative, but only in relation to agricultural employers with particular labour shortages and/or migrant labour demands. The survey is likely to under report on those farmers with little demand for migrant labour and/or with no experience of labour shortages. This should not be an issue because the aim of the survey was to examine where labour shortages and/or skills gaps in UK agriculture exist, and not to survey the whole of UK agriculture *per se*. Nevertheless, it is worth noting the tendency of farmers to overplay labour shortages (and the need for migrant workers to fill these shortages) in order to ensure labour costs are kept to a minimum (see Mitchell 1996: 84-85).

APPENDIX 4: Agricultural labour use survey (April 2008)
MIGRATION AND LABOUR SHORTAGES IN UK AGRICULTURE
Q1. During this year's peak season, how many staff will you have working for you:

	Directly Employed	Via Agency
Permanent (full-time equivalent)		
Casual/ Seasonal		

Q2. During this year's low season, how many staff will you have working for you:

	Directly Employed	Via Agency
Permanent (full-time equivalent)		
Casual/ Seasonal		

Q3. What area(s) of agriculture do you operate within:

Fruit	
Salad Produce	
Other Vegetables	
Arable	
Livestock	
Other (please specify)	

Q4. In the period January 2003 to December 2006 did it become easier or harder to find workers?

Easier	
Harder	
No Change	

Q5. In the period January 2007 to the present date did it become easier or harder to find workers?

Easier	
Harder	
No Change	

Q6. Over the past five-years have you experienced any of the following:

Seasonal labour shortages	
Year-round labour shortages	
Decline in the attitude/ ethic of workers	
Surplus labour	
Rise in the attitude/ ethic of workers	
Specific skills shortages (please specify skill/ occupation)	

Q7. Do you expect to find it easier or harder to fill vacancies over the next five-years?

Easier	
Harder	
Cannot say	

Q8. If you expect to find it harder to fill vacancies over the next five-years, what will be the impact on your business?

Q9. If you have experienced labour shortages over the past five years, how Important have the following factors been in helping to mitigate / eliminate the problem?

Solution	Very Important	Important	Not Important
Recruited migrant labour directly			
Used new technology to reduce labour demand			
Recruited migrants through SAWS			
Recruited through gangmasters/ employment agencies			
Increased productivity of existing workforce			
Raised wages to attract workers			
Targeted unemployed British workers			
Advertised vacancies			
Used colleges/ universities to fill skills gaps			
Used local Jobcentre			
Other (please specify)			

Q10. If you have used migrant workers over the past five-years, what would you say have been the pros and cons of doing so?

Advantages of migrant workers	Disadvantages of migrant workers

Q11. Please indicate where ALL of your workers (agency and directly employed) now come from:

	Approximate Proportion (%)
Local	
Rest of UK	

Foreign – A8 ²⁶	
Foreign – A2 ²⁷	
Foreign – Other (please specify)	

Q12. What are your views on recent/ proposed changes to SAWS?

Q13. Please use the space below to include any other thoughts or comments you may have on labour demand/ supply within UK agriculture

For sampling purposes could you include the first part of your postcode (e.g. L17, WA10, etc)

.....

THANK YOU

²⁶ Poland, Lithuania, Latvia, Estonia, Hungary, Czech Republic, Slovakia, Slovenia.

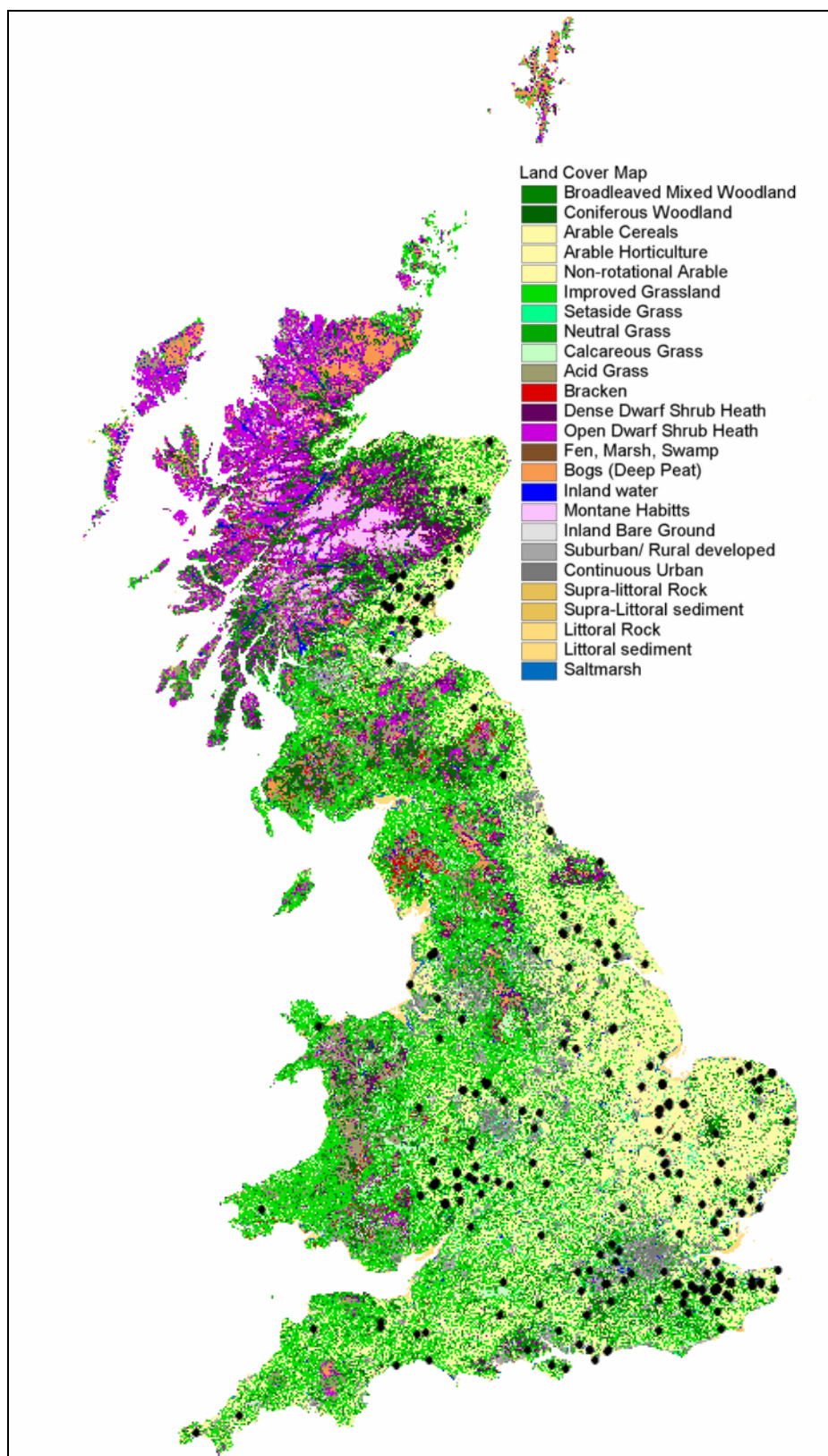
²⁷ Bulgaria and Romania

APPENDIX 5: Sectors represented by the 268 survey respondents

Sector	count	no of sectors
only fruit	84	1
only other veg	21	1
only other	18	1
only salad	16	1
other veg and arable	13	2
fruit and arable	12	2
fruit and other veg	11	2
arable and livestock	10	2
fruit, other veg, arable, livestock	8	4
other veg, arable and livestock	6	3
salad, other and arable	6	3
fruit, arable and livestock	6	3
only livestock	5	1
salad and other veg	5	2
fruit, other veg, arable	5	3
only arable	4	1
livestock and other	4	2
arable and other	4	2
fruit, other veg, arable, other	3	4
fruit and salad	3	2
other veg, arable, livestock and other	2	4
fruit and livestock	2	2
fruit, arable and other	2	3
fruit, other veg and livestock	2	3
none given	1	0
arable livestock and other	1	3
Other veg and other	1	2
other veg and livestock	1	2
other veg, arable and other	1	3
salad and other	1	2
salad and arable	1	2
salad, other veg, livestock, other	1	4
fruit and livestock and other	1	3
fruit, arable, livestock and other	1	4
fruit, other veg, livestock and other	1	4
fruit, other veg, arable, livestock and other	1	5
fruit, salad and other veg	1	3
fruit, salad , other veg and livestock	1	4
fruit, salad , other veg , arable and livestock	1	5
fruit, salad , other veg , arable , livestock and others	1	6

Source: (University of Liverpool and NFU 2008)

APPENDIX 6: Survey respondents according to UK location and agricultural land-use²⁸



Source: (University of Liverpool and NFU 2008).

²⁸ 255 of the 268 survey responses (95%) have been mapped.

APPENDIX 7: The Seasonal Agricultural Workers Scheme

Seasonal Agricultural Workers Scheme (SAWS)

SAWS was introduced in the UK during the 1940s and offered a route for migrants (agricultural students in particular) to enter the UK and work in agriculture on a temporary basis. The plan at present is to phase out SAWS by 2010. From 2008, the scheme became restricted to Bulgarian and Romanian workers (in 2007, 40 percent of the quota was restricted to Bulgarian and Romanian workers). These restrictions make the scheme very different to that developed in the 1940s but they are consistent with the UK government's desire to limit low-skilled migration from outside the EU (Home Office 2005). Until the 2007-08 restrictions, the main source countries for SAWS during the 2000s were: Ukraine, Bulgaria, Belarus, Romania, Russia and Moldova. Similar Seasonal Agricultural Worker Schemes exist elsewhere in the world. Canada, for example, has a Seasonal Agricultural Workers Programme (SAWP) that began in 1974 as a bilateral agreement between Canada and Mexico and followed on from an earlier 'offshore' programme. The scheme now attracts around 10,000 workers per year, is demand-driven based on requests from employers, and can be adjusted at a provincial level.

Table 1: SAWS Quotas

	Early 1990s	2001	2002	2003	2004	2005	2006	2007	2008
SAWS	5,500	15,200	18,700	20,200	25,000	16,250	16,250	16,250	16,250

Source: (Home Office, compiled from annual data).

Table 2: SAWS-Registered Operators (2006)

COMPANY	2006 INTAKE
Concordia (YSV) Ltd	6,058
Friday Bridge (International Farm Camp)	355
Barway Services (Formerly Gs Marketing)	680
Haygrove Ltd	387
HOPS Labour Solutions	6,806
R & J M Place (International Farm Camp)	420
S & A Produce	1,330
Sastak Ltd	100
Wilkin & Sons Ltd (International Farm Camp)	114

Source: (Home Office 2008, from website)