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What do we mean by a ‘small farm’?

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Abstract

The holding of a seminar on the future for ‘small farms’ requires us to consider what is meant by a ‘small farm’. This is not as straightforward as might be imagined. It presupposes an unambiguous definition of what constitutes ‘a farm’ and a means of distinguishing those farms which are considered to be ‘small’ from the remainder of other farms, that is larger farms. This in turn presupposes an accepted measure of farm size (or amalgam of such measures) and adoption of an agreed size threshold below which farms might be described as ‘small’. However the choices in respect of measure of farm size and threshold for a farm being considered as ‘small’ may depend, respectively, on the particular policy context (for example, contribution to output or employment or land use) and the size distribution of farms within the country(ies) in question. In particular, and analogous with the definition of poverty, there is a choice to be made as to whether farm size is to be assessed in absolute or relative terms. If the former, virtually all farms in some countries may be considered to be small; if the latter, the existence of a ‘small farm’ sector will inevitably continue.

Keywords

Farm; Agricultural holding; Farm size; Small farms; Part-time farming

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1. INTRODUCTION

This paper has been written to provide an introduction to the EAAE/IAAE seminar on “Small farms – persistence or decline” by considering exactly what is meant by a ‘small farm’. Section 2 examines the issues involved in specifying how the population of farms might be defined and identified. Sections 3 and 4 then consider the choice of measures of farm size and the choice of size thresholds which might lead to a particular set of farms being identified as ‘small’ while Section 5 reports current EU and UK statistical practice in classifying farms by size or as being ‘small’.

Since small farms are sometimes described as ‘part-time’ farms, and may be operated on a ‘part-time’ basis, Section 6 considers the different uses of the term ‘part-time farming’ which are sometimes employed. The paper concludes with a Section 7 recommending explicitness and consistency in the use of terminology, together with empirical examination of the relationship between different measures of farm size and different means of defining ‘part-time farming’.

2. DEFINING A ‘FARM’

The term ‘farm’ is normally used to refer to a unit engaged, wholly or mainly, in agricultural production. However, this usage begs some important definitional issues – particularly of a ‘unit’ and of ‘agricultural’ production. Of these, the definition of ‘agriculture’ is the simpler, this being defined within related systems of industrial classification: at world level, the UN’s International Standard Industrial Classification (ISIC rev 4); at EU level, the NACE (NACE Rev.2); and, at UK level, the Standard Industrial Classification (SIC, 2007). The first two of these include specifications to the 4-digit level while the national equivalent includes the option of further detail (5th digit) in the specification. These definitions involve detailed enumeration of different crop and livestock activities (e.g. 30 sides in ISIC rev 4).

With regard to the ‘unit’ itself, there is an important distinction to be drawn between the concepts which, in the context of broader national statistics, are referred to as the ‘enterprise’ and as the ‘establishment’. In the System of National Accounts 2008¹, the term ‘enterprise’ is used to describe an institutional unit in its capacity as a producer of goods and services, with an institutional unit having been defined as an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in transactions with other entities. An ‘establishment’, on the other hand, is defined as an enterprise or part of an enterprise that is situated in a single location and in which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added.

These conceptual definitions and distinctions have to be translated into operational terms for the process of collecting statistics, on the basis of which one may examine the extent and development of the small farm sector. In Great Britain² the basic unit used in the annual Agricultural and Horticultural surveys - the main source of regular information on the structure of agriculture - is the ‘holding’, the guideline definition of which (operated pragmatically and subject to agreement with the farmer) is that ‘it comprises land on which agricultural activities are carried out and which is, by and large, farmed as one unit having regard to such supplies as machinery, livestock, feedingstuffs and manpower’³. It is however recognized, on the survey forms, that several holdings may be run by the same holder (these being those ‘in the same occupancy/partnership’). It follows that the

¹ See paragraphs 4.2, 5.1 and 5.2 of Commission of the European Communities et al (2008). The definitions of these terms are as in the preceding System of National Accounts 1993.

² Great Britain comprises the three countries of England, Scotland and Wales. The United Kingdom comprises these countries together with Northern Ireland. There are some differences in political systems and statistical practice between the four countries of the UK.

³ MAFF (1995), page 2-1.

number of holdings will be greater than that of the number of farm businesses (i.e. enterprises in the terminology of the SNA) and that their average size will be smaller. The practice is different in Northern Ireland in which the register used for farm surveys relates to farm businesses though the number of multiple holdings within the same business is probably proportionately lower in Northern Ireland than in the rest of the United Kingdom. Nevertheless the distinction between the concepts of a holding and of a farm business is clearly of importance to considerations of the structure of agriculture and may be of relevance to the consideration of the small farm sector.

An issue which is specific to agriculture, or at least to industries in which small-scale units run by self-employed persons are common, is that of defining the set of units which constitute the 'population' of units (e.g. holdings, as defined above). This issue arises because there may be a degree of arbitrariness about what constitutes an agricultural holding. The option of identifying, as holdings, only those units which sell at least part of their produce is one possibility but this option can suffer from the disadvantage of excluding potentially large holdings linked to, and producing solely for, certain types of institutional units (schools, prisons etc.) and also holdings producing solely for the domestic consumption of large and possibly extended families. Its universal use would thus mean disregarding a substantial part of agricultural production in some countries. However, dismissing this option means that, in principle, any unit producing any form of agricultural produce (of which cut flowers and picked fruits are examples) could be considered to constitute an agricultural holding. In practice, when the commercial sale criterion is not adopted, the categorization of a productive unit as an agricultural holding is likely to be affected by the scale of its production, the extent of its land area and any administrative requirements and regulations which may affect it and its need for recognition by public authorities. It thus follows that the cut-off point for the categorization of an agricultural productive unit as a 'holding' is likely to be imprecise and to vary between countries and through time⁴.

A further problem in the identification of the set of holdings (or 'farms') in a country may arise from the classification of let land. The normal practice is to include most rented land within the holding of the lessee but the position may not be so straightforward in the case of land let out for a specified short period. For example, within the United Kingdom, the long-term practice had been to stipulate that land let for a period of less than a year should be returned, within the annual 'Censuses' (now 'surveys'), by the lessor, such land thus possibly constituting a separate holding. However this practice was then changed so that such land is now to be recorded by, and attributed to, the lessee. The effect of this change, which was first made in Northern Ireland (where the 'conacre' system, of short-term lettings, is common), was to reduce the number of holdings, and particularly the apparent number of small holdings, and to increase their average size. However other developments, notably the need to monitor animal movements, have resulted in the identification – in Great Britain - of a larger number of separate holdings, though many of these have very little land. The consequence of these changes has been to affect the apparent number and the average size of agricultural holdings and, in the case of the latter developments, to increase the apparent number of small holdings (including that of those with little or no agricultural activity).

It follows, from all these considerations, that especially great care should be exercised when examining the size distribution of farms, particularly at the lower (i.e. small farms) end of the distribution. In particular the extent to which 'small farms' are included, as separately identified

⁴ Such a difference currently exists within the United Kingdom in which the practice in Northern Ireland is to maintain a register limited to 'farms' with either over a hectare of land area or, in the case of those below this threshold, to those with some significant commercial agricultural activity (e.g., mushrooms or horticulture) during the last two years. The number of holdings in Great Britain has however been affected by the growth in administrative requirements to register as a holding.

units, within farm size distributions is likely to vary between countries and through time, thus affecting the consistency and comparability of data sets on ‘small farms’⁵.

3. MEASURES OF FARM SIZE

The identification of a set of farms as being ‘small’ also depends on the adoption of some measure, or set of measures, of farm size and then of some threshold(s) such that farms below that size are deemed to be small. Unfortunately ‘there isno generally accepted measure of firm size in the economics literature to guide the choice in the specifically agricultural context. Various measures of output, sales or turnover; of inputs, both flow and stock based (e.g. number of employees or value of fixed capital); and of the incomes (accruing or capitalised) of a company’s equity holders have been used in different contexts’⁶. The most obvious measure in the specifically agricultural context, land area, may – depending on the variety of farms being considered - be a poor economic measure of farm size since land is so variable in its agricultural attributes and farms of different types can require vastly different areas of land for the same value of output. Other commonly used measures of farm size are ones based on the stocking of different types of animals and areas sown under different crops, these often being weighted together on the basis of the typical gross margins earned or the typical amount of manual labour involved. Such weighting approaches have yielded the standard gross margin (SGM) / European size unit (ESU) and the standard man day (SMD) / standard labour requirements (SLR) measures respectively which either have been or are now used in classifying EU and, more specifically, UK agricultural holdings into particular size categories⁷.

It is moreover to be questioned whether any single measure of farm size is relevant in all of the contexts in which one might wish to examine the role, performance and future of small farms. For example the choice of measure may be dependent on whether the focus of interest is on agricultural land use, on contribution to total agricultural output or to rural employment and well-being. In this and other contexts there is clearly a trade-off of objectives: selecting a measure of farm size appropriate to the particular issue under consideration has obvious advantages but at the cost of limiting comparability and consistency across a wider set of examinations.

4. CHOICE OF SIZE THRESHOLDS

Once a measure, or set of measures, of farm size has been selected it is necessary – if one wishes to examine, discuss and report on a ‘small farm’ sector – to specify a particular size below which farms might be deemed to be small. Although this may not be immediately obvious in any particular country / point in time context, this choice effectively implies a decision as to whether to adopt an absolute or a relative criterion for categorizing farms as ‘small’. International comparisons of farm size distributions show very large differences in average sizes between countries and there are also marked differences, within a country, between farm types and also through time. For example, Lund and Price (1998) and Lund (2005) presented comparisons of average holding sizes across the European Union, based on data from the 1993 and 1997 EU Structure Surveys, which showed the average size of holdings in the UK to be much higher than those in other EU countries whereas the comparisons presented in Lund and Price (2007) showed UK holdings to be very much

⁵ This was one of the reasons which led first Britton (1950) and then Lund and Price (1998) to favour a particular measure of average size, which the latter authors labelled the ‘mid-aggregate point’, when examining farm size distributions. This measure – the value at which the cumulative sum of the variable under examination on units larger (or smaller) than it represents 50% of the total sum of the variable - is usually much less sensitive than the mean or median to the inclusion or exclusion of (typically, very many) small farms / holdings in statistical data sets.

⁶ Lund (1983), p.188, and Lund and Price (1998), p. 101.

⁷ These measures are described in more detail in Section 5.

smaller, on average, than those in Australia, Canada and the United States⁸. It follows that what might be considered to be an ‘average’ farm size in one country would be considered to be a ‘small’ farm in another country and thus that the cut-off points for what might be considered to be a ‘small farm’ may differ considerably between countries.

5. CURRENT EU AND UK PRACTICE

Nevertheless a fairly consistent holding size classification system is used across the European Union, notably within its Farm Structure Surveys and Farm Accountancy Data Network (FADN). This and other aspects of these surveys is prescribed at EU level, often with legislative backing, though the surveys are actually conducted by Member States and may, as in the case of the four countries of the United Kingdom, be effectively continuations of, or be incorporated within, longer running surveys conducted to meet national needs.

The recently revised legislation⁹ relating to the periodic Farm Structure Surveys defines their coverage as being:

- (a) agricultural holdings where the agricultural area utilised for farming is one hectare or more
- (b) agricultural holdings where the agricultural area utilised for farming is less than one hectare, if these holdings produce a certain proportion for sale or if their production unit exceeds certain physical thresholds.

However it is recognized that, consistent with the differing agricultural structures in different member states, some member states may wish to set a higher area size threshold and so it is additionally specified that ‘Member States which use a survey threshold above one hectare shall fix this threshold at a level that excludes only the smallest agricultural holdings which together contribute 2% or less to the total utilised agricultural area excluding common land and 2% or less to the total number of farm livestock units.’ On the other hand there is also a requirement that all agricultural holdings reaching any one of a number of specified physical thresholds (e.g. a total utilised agricultural area of 5 hectares and specified areas/numbers for particular crops or livestock) shall be included in the survey.

The structure surveys collect only physical data – notably land areas, both in total and for specific crops and land uses, livestock numbers and numbers of persons working on the holding and their time allocations. The Farm Accountancy Data Network (FADN)¹⁰, on the other hand, was set up to monitor the financial situation of farming using information on a sample of farms run as market-oriented holdings and which provide the main occupation of their operator¹¹. This survey likewise covers a sample of farms of at least 1 hectare or of less than 1 hectare provided they market a certain proportion of their output or produce more than a specified amount of output though its intended coverage of the smallest holdings / farms is rather less than for the structure surveys.

For both surveys the size of farms is evaluated using the concept of Standard Gross Margin (SGM) where the SGM for a farm is the sum of the separate SGMs for each crop or livestock item. These are defined as the normal value of output from one hectare or from one animal less the normal cost of variable inputs required to produce that output. The SGM coefficients are also used to determine

⁸ These sets of comparisons are not easily summarised given the several countries covered, the use of alternative measures of farm size (where possible) and the three different measures of ‘average’ being compared.

⁹ Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No 571/88.

¹⁰ The information presented in this and the following two paragraphs is partly based on the EU Commission website http://ec.europa.eu/agriculture/rca/diffusion_en.cfm

¹¹ Council Regulation No 79/65/EEC of 15 June 1965.

the farm type to which the farm should be allocated for purposes of the farm type (typology) analyses of the data. The coefficients are updated every two years and are calculated on a regional basis for more than 90 separate crop and livestock items¹²; thus the same level of agricultural activity can result in different SGMs depending on both space and time. The economic size of farms is expressed in terms of European Size Units (ESU). The value of one ESU is defined as a fixed number of EUR/ECU of Farm Gross Margin; over time the number of EUR/ECU per ESU has changed to reflect inflation.

Although the ambit of the FADN is as specified above, the thresholds for inclusion within it - expressed in SGMs - vary between member states, ranging from 1 or 2 in most of the new member states to 16 in Belgium, Germany, the Netherlands and the United Kingdom¹³. The results from the FADN are analysed in different groupings at both EU and member state level, specifically for different types of farming and for different economic size groups. In the case of the latter, two alternative groupings are specified (the more detailed one having 10 classes and class boundaries at 2, 4, 6, 8, 12, 16, 40, 100 and 250 ESUs), but without any descriptive measure of size being linked to the size groups¹⁴. In future Standard Output (SO) is to replace SGM in the calculation of farm sizes and in farm typology, SO being the normal monetary value of gross agricultural output at farm-gate prices.

In addition to being so classified within EU statistics the data collected and published for the UK countries is, in the main, classified according to a different size classification system¹⁵. This is based on the concept of Standard Labour Requirements (SLR) where a normal labour input requirement is determined for each crop or livestock item (under typical conditions and for farming 'enterprises' - crops or livestock - of average size and performance) and each is applied to the actual crop areas or livestock numbers on the holding to yield an SLR for each crop and livestock 'enterprise' and thus a total SLR for the holding. The resulting measures thus have an intuitive interpretation, with an SLR of 1.0 indicating that the holdings' activities (as indicated by its crop areas and livestock numbers) are such as to normally require the full-time input, over a year, of one person. Thus the data from holdings in the June agricultural survey in England are broken down into six size bands: 'very small - spare time' (up to 0.5 SLR); 'very small - part time' (0.5 to 1.0 SLR); 'small - full time' (1 to 2 SLR); 'medium - full time' (2 to 3 SLR); 'large - full time' (3 to 5 SLR); and 'very large - full time' (5 or more SLR).

The minimum farm business size for participation in the Farm Business Survey conducted in England is an SLR of 0.5 and the businesses are classified into four size groups, each of which is likewise given a size description. The class boundaries for these size groups are 1.0, 2.0 and 3.0 SLRs and the descriptions are 'part-time', 'small', 'medium' and 'large' respectively, with 'part-time' thus indicating 0.5 to 1.0 SLR and 'small' indicating an SLR between 1.0 and 2.0. Although the terminology is not exactly the same, this size classification system is consistent with that used for the June surveys though slightly less detailed. It is to be noted that both disaggregations use the term 'part-time' in a very particular way and to describe the size of the holding / farm business rather than the particular time inputs or other uses of the time of the person(s) running it. Attention is therefore now turned to the different uses of the term 'part-time' in the farming context.

¹² It might here be noted that both this and other measures of farm size, and the related typology classifications, do not take account of the scale of additional ('diversified') activities on the farm even though these may be included within the farm accounts and thus the measures of farm incomes.

¹³ However in the case of Northern Ireland the threshold is 8 SGM.

¹⁴ By way of guidance as to relative magnitudes, it is stated in Defra et al (2009), Table 3.10, footnote (b), that a size of 8 ESU is judged to be the minimum for full-time holdings in the UK.

¹⁵ An exception is provided by the June survey data for Wales for which the analysis by holding size-group is based on SGM. In addition the farm typology, for all four countries, continues to be based on SGM.

6. PART-TIME FARMING

It is generally agreed that ‘part-time’ farming is now a common feature of agriculture in many countries and one which has grown in importance. However the term ‘part-time’ is rarely defined, a fact of particular note since there are at least three usages of the term in the agricultural context – ones applying both to the farms and to the persons running them.

One usage is that reported in CEAS (1977) as having been favoured by a workshop held at Wye College, University of London. This was: ‘the practice of a farm-based household in which one or more members are gainfully engaged in work other than, or in addition to, farming the family’s holding’. Logically this definition, and similar ones in Gasson (1988) and Kada (1980), could result in a farmer working for normal hours, or more, on a large farm being described as ‘part-time’ simply because some other member(s) of the household have some other form of gainful employment, possibly (but not necessarily) in addition to working on the farm. The adoption of such a definition would thus probably mean that the majority of farms, including many of the very largest, would be described as ‘part-time’ at some stage in the family life cycle.

The definition quoted above can, however, be considered as a rather extreme version of that in perhaps the most common usage in the agricultural context: that a farmer is part-time if they themselves have any other form of gainful employment. However even this definition differs from two others in common parlance outside the specifically agricultural context. In other industries, the term is most commonly used to refer to the practice of working less than the standard time (e.g. hours per week) associated with a particular job or occupation. This use is clearest in the case of employees, though it is also specified, in the June Agricultural Survey forms, for all people working on a holding (including the principal farmer)¹⁶. The term ‘part-time’ is also used in other common parlance to refer to the gainful activities of a person which are considered secondary (usually in terms of time) to their main occupation: thus a person might describe themselves as being a teacher but having some other ‘part-time’ job. In this usage it is the secondary job which is being described as ‘part-time’ and not the primary one.

These latter usages of the term ‘part-time’ clearly apply – at least in the first instance – to persons rather than to agricultural holdings or to farm businesses. To add to the potential confusion, it will be noted that the term ‘part-time’ is now being used in two different ways in UK agricultural statistics and with neither usage corresponding to that perhaps most common, with respect to farming (but not other gainful activities), in the media and in farming circles. It is thus necessary for the intended meaning of the term ‘part-time farming’ to be clearly stated whenever it is used.

Fortunately it is possible to make some empirical examination of the extent of correspondence between the different definitions of part-time farming. For example, on the basis of data from the Agricultural surveys in England it has been possible to compare the split of the principal farmer(s) and spouse(s) between whole-time and part-time (based on actual time input) and the size of the holding measured in Standard Man Days (SMD), a precursor of the current SLR measure of holding size. In England and Wales in 1989, there were nearly twelve times as many whole-time as part-time ‘principal farmers and partners’ on holdings requiring 250 or more SMD per year. A similar comparison should be possible now, using the SLR measure of holding size. Information on the relationship between the different criteria for classifying farmers and farms as part-time may also be provided by the Farm Business Surveys.

¹⁶ The term part-time is used, in this context, to refer to persons working less than 39 hours per week in England and Wales, less than 38 hours per week in Scotland and less than 30 hours per week in Northern Ireland: Defra et al (2009), Table 3.8, footnote (f).

Information on the relationship between the time-spent working on the holding and the size of the holding has been provided by the EU Farm Structure Surveys though, in this case, the size of the holding is measured in ESU rather than a required labour input measure. However these surveys have also provided a classification of holders, by size group of their holding, according to whether they had another gainful occupation and whether this other occupation was their major occupation or a subsidiary one. Both the existence of other gainful occupations and their importance (i.e. as the major occupation) have been found to be greatest for farmers on smaller holdings. There thus appears to be a substantial correspondence between the classifications of farmers and their holdings as ‘part-time’ on the basis of the different usages of the term ‘part-time’ and between these and the size of the holdings. However this empirical observation does not remove the need for clarity with respect to the usage of the term ‘part-time farming’ being adopted: the correspondences are not perfect and their extents can only be meaningfully examined on the basis of clear specifications relating to the uses of the term ‘part-time’.

7. CONCLUSIONS AND RECOMMENDATIONS

It has been reported that there is a degree of arbitrariness, and variation in practice, in respect of the thresholds for recording the very smallest agricultural holdings or farms as holdings or farms. This means that the numbers of what might be considered to be ‘small farms’ should be treated with some caution as the criteria for their enumeration are likely to vary between countries and through time. A second problem in identifying a set of ‘small farms’ is the lack of any unique measure on the basis of which to categorize farms by size: different measures of size may be appropriate in different contexts – but at the cost of a lack of comparability across contexts. A third problem lies in the choice of size threshold below which a farm is to be considered as ‘small’- is this to be determined on some absolute basis or relative to those around it? If the former, virtually all farms in some countries may be considered to be small; if the latter, the existence of a ‘small farm’ sector will inevitably continue.

The current size classifications of EU and UK data on agricultural holdings and farm businesses have been described, with it being noted that the terms ‘small’ and ‘part-time’ are used as titles for particular size categories in data sets relating to UK countries. Since these terms are often associated with one another and since the latter is used in three different ways in agricultural and farming contexts, its particular usages have been examined and found to be very different – both as between each other and also with respect to usage in other industries. Nevertheless data does exist to allow empirical examinations of the relationships between the three definitions of part-time farming and between these and the concept of ‘small farms’, as reflected in empirical data. It is therefore recommended that such examinations continue to be undertaken and that terms such as ‘small farms’ and ‘part-time farming’ be defined in the particular context in which they are being used.

REFERENCES

Centre for European Agricultural Studies. Part-time farming: its nature and implications: a workshop report, Wye College Centre for European Agricultural Studies, 1977.

Commission of the European Communities, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations and World Bank, *System of National Accounts 2008 (pre-edit white-cover version of volume 1)*.

Department for Environment, Food and Rural Affairs; Department for Agriculture and Rural Development (Northern Ireland); Welsh Assembly Government, The Department for Rural Affairs and Heritage; and The Scottish Government, Rural and Environment Research and Analysis Directorate. *Agriculture in the United Kingdom 2008*, National Statistics, 2009.

Gasson, R. The economics of part-time farming, Longman Scientific and Technical, 1988.

Inter-Secretariat Working Group on National Accounts. *System of National Accounts 1993*, Brussels/Luxembourg, New York, Paris, Washington DC, 1993.

Kada, R. Part-time family farming: off-farm employment and farm adjustments in the United States and Japan, Centre for Academic Publications Japan, Tokyo, 1980.

Maff. *Digest of Agricultural Census Statistics*, United Kingdom, 1995. ‘

Lund, P. J. ‘The use of alternative measures of farm size in analysing the size and efficiency relationship’, *Journal of Agricultural Economics*, Vol. 34, (1983) pp.187-189.

Lund, P. ‘Aspects of the definition and classification of farms’, EAAE Seminar on Institutional Units in Agriculture, Imperial College, London (Wye campus), 2005.

Lund, P. and Price R. ‘The measurement of average farm size’, *Journal of Agricultural Economics*, Vol. 49, (1998) pp. 100-110.

Lund, P. and Price, R. ‘The measurement of farm size and the meaning of part-time farming: the AARES countries’, AARES 2007 Conference, Queenstown, New Zealand.