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CHARACTERISATION OF SMALL FARMERS IN ASIA AND THE PACIFIC

Abstract

A sizeable portion of agricultural activity in Asia is carried out on small and marginal farms. Their characterization, definitions, identification and the measurement of their activities is a pre-requisite for preparing policies which promote their welfare, besides development of the agriculture sector. Countries adopt varying criteria for coverage and classification of agricultural holdings in their census and surveys, which make international comparisons difficult. Often classification and tabulation of data from agricultural surveys are not carried out to adequately reflect the role played by small farmers. There is a need to consider requirement of data for policies for small farmers at the time of planning agricultural surveys. The marginal cost for provision of such data will be negligible. There is also need to evolve an internationally comparable criterion for characterisation of small farmers taking into account the recommendations made by a group of experts in Asia and the Pacific.

Importance of small agricultural holdings in Asia and the Pacific

Small agricultural holdings constitute a vast majority of farms in many developing countries. The studies based on World Programme of Census of Agriculture (WCA) 2000 indicate that the Asia and Pacific region has the smallest size of holdings in the world. Against an average overall size of 5.5 hectare for 114 FAO member countries for which the data was made available to FAO, the average size of holding in Asia is only about 1 hectare. Interestingly, the average size of holding estimated in Bangladesh agricultural survey of 2005 comes to only 0.3 hectare. In Pacific Islands, the average size of the holding, excluding Australia and New Zealand, ranges from 0.6 ha in Cook Islands to about 3.6 ha in Samoa. Yet another feature of agricultural holdings in Asia is that these are often fragmented. The average number of parcels per holding in Asia is 3.2. Table 1 presents a comparative picture across continents. See also the table at [Annex-1](#) showing the distribution of agricultural holdings in smaller size classes for the countries in Asia and the Pacific.

Table 1: Average size and fragmentation of agricultural holding during (1995-2005)

Countries by continent (Number of reporting countries is given in parenthesis)	Average area per holding (hectare)	Average number of parcels per holding
WORLD TOTAL (114)	5.5	3.5
AFRICA (25)	11.5	3.0
AMERICA, NORTH & CENTRAL (14)	117.8	1.2
AMERICA, SOUTH (8)	74.4	1.2
EUROPE (29)	12.4	5.9
ASIA (29)	1.0	3.2

Although there does not exist a commonly accepted definition of small farmers, in some countries (or regions) of Asia the percentage of small holdings (below 2 ha) could be up to 90 percent of the total holdings in the country. The share of area operated by small holders in the total agricultural area of the country varies from one country to another. But in most Asian countries total land cultivated by small holders represent a sizable portion of agricultural land in the country.

A study of 14 countries in Asia indicated that 57.9 percent agricultural holdings were below 1 hectare and these accounted for 14.2 of the operated area. If we extend the limit to 2 hectare, over 85 percent holdings accounting for nearly 31 percent agricultural land gets covered. In five Pacific countries, viz. American Samoa, Cook Island, Guam, Marina Island (north) and Samoa, 36.3 percent holdings of 1 hectare and below manage only 5.4 percent of total area. Holdings below 2 hectare account for 63.7 percent of total holdings and operate only 18.3 percent of land. The statistics on individual countries may be seen in the table at [Annex-1](#). It is noted from this table that in Nepal, the agricultural holdings below 1 hectare operate about 40 percent of cultivated land in the country. In India, over 80 percent of holdings are under 2 ha and they account for nearly 40 percent of the area. The Charts 1 to 4 relating to Asia and the Pacific clearly display the concentration of holdings in smaller size classes, viz. below 1 and 2 ha. While making comparison based on distribution of holdings by size, one needs to

take note of limitations imposed by criteria adopted by countries for coverage of holdings in their census and surveys. This aspect is discussed in detail later in the paper.

2. Nature of small scale agriculture

It has been observed that given irrigation facilities small agricultural holdings tend to adopt intensive cultivation, growing up to four crops a year, optimizing the land use to improve their household food security situation or to augment their income from agricultural activity. This special characteristic of agriculture holdings in Asia and the Pacific calls for special attention to be given to the small farmers in policies relating to the management of the food and agriculture sector, particularly those relating to supply of agricultural inputs, technology dissemination, marketing arrangements and credit.

Charts 1 - 4 : Area Operated by Small Holdings in Asia and Pacific

Chart 1 of 4 : Asia < 1 ha

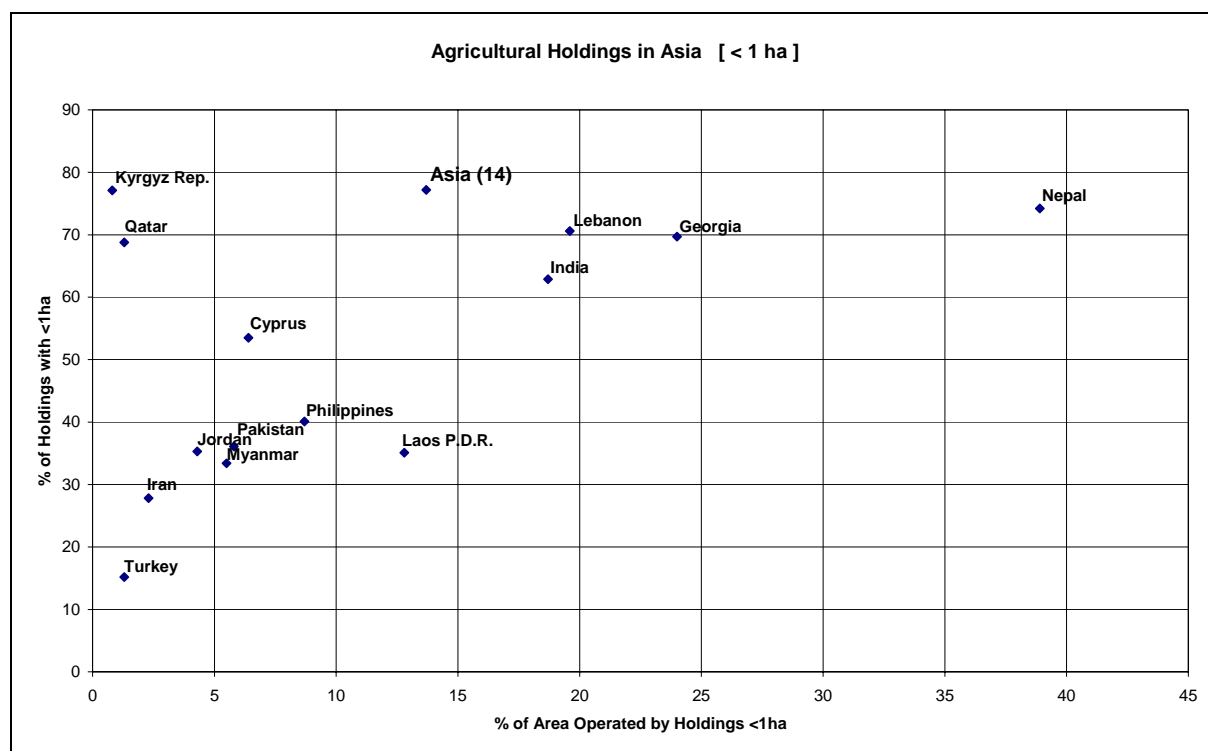
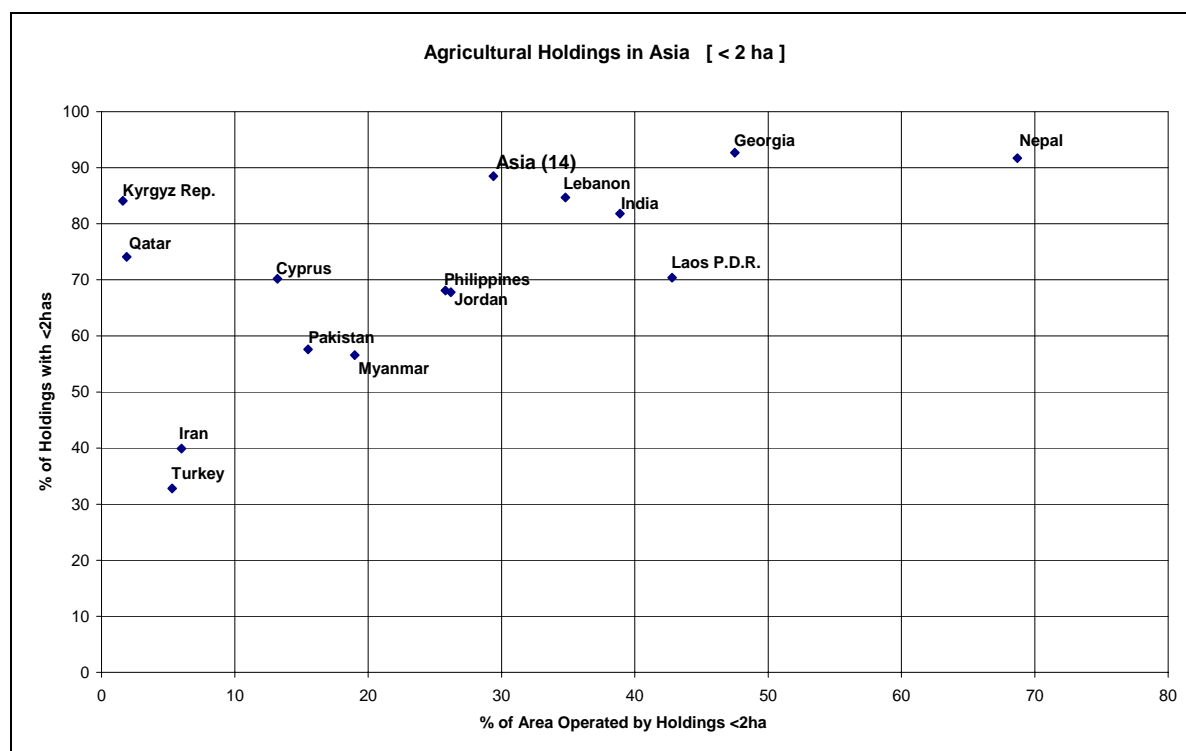


Chart 2 of 4 : Asia < 2 ha



Note: Asia (14) refers to average of 14 Asian countries for which complete data was available.

Chart 3 of 4 : Pacific < 1 ha

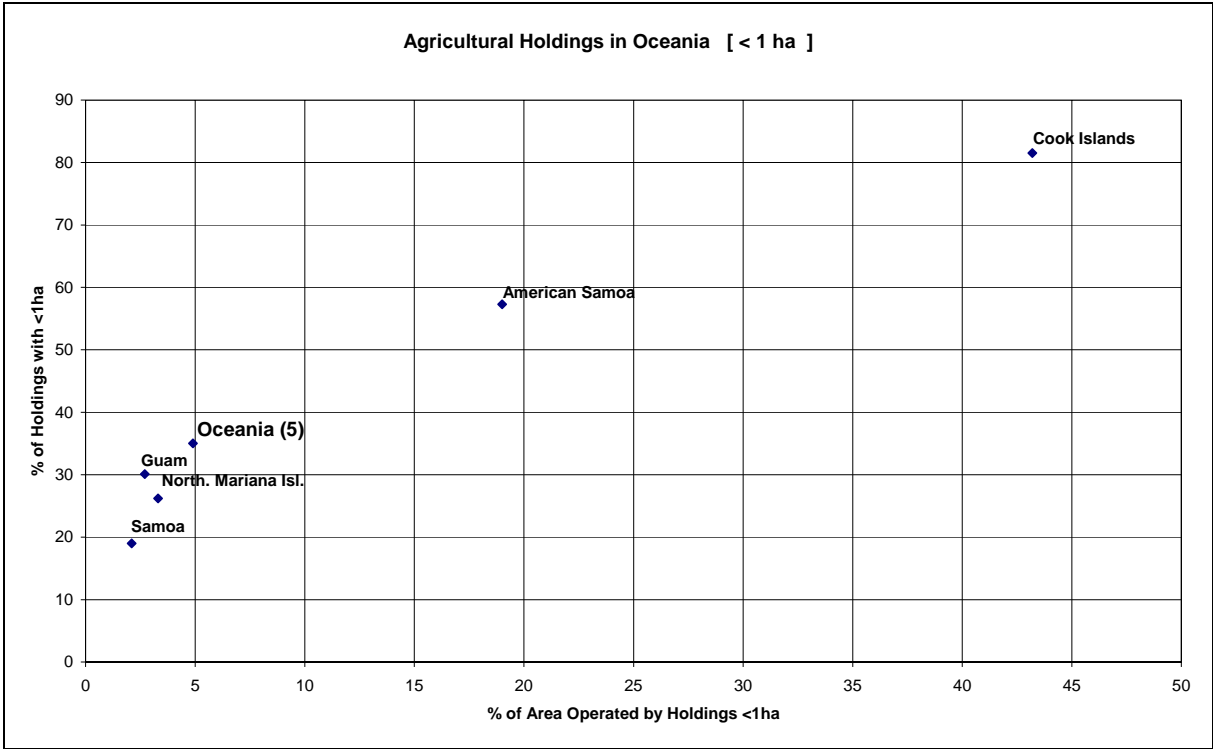
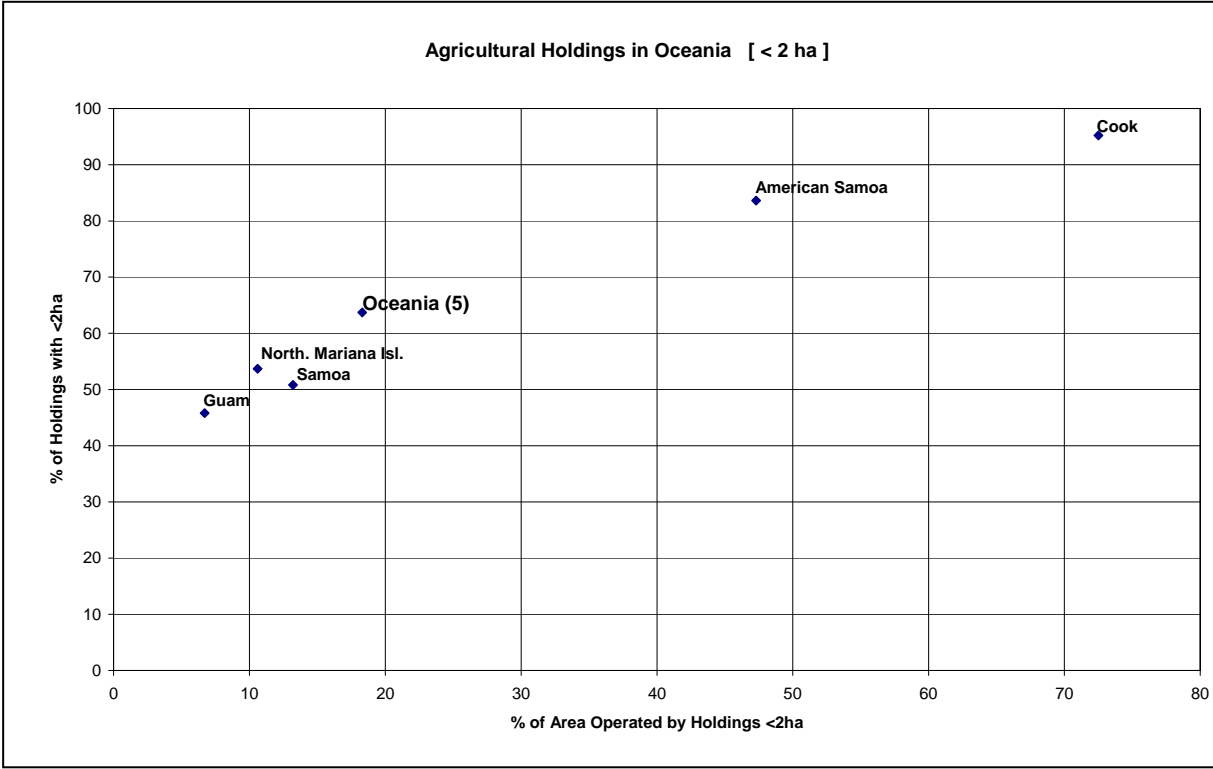


Chart 4 of 4 : Pacific < 2 ha



Note: Oceania(5) refers to average based on 5 Pacific countries.

The livelihood of households dependent on small farms is more susceptible to shocks arising out of vagaries of weather or pest attacks. Due to the subsistence type of agriculture, the small farmer household is more vulnerable to food insecurity situation even in the event of slight drought. Small farmers have fewer coping strategies than medium or large farmers.

Small holders usually lack resources to invest in their land or livestock. Many a type of farm technology and machinery are unsuitable for adoption at small scale. Often small scale farms adopt an integrated crop and livestock system. In many countries there may exist specific crop and/or livestock species raised by small farmers, e.g. millets and poultry, pig, sheep and goat rearing. The agricultural policies and executive actions cannot be effective if they ignore these features of the agriculture sector.

The macro-economic and sectoral policy instruments do not affect the large and the small farmers in the same ways. Thus there is a need for information to carry out an analysis of the policy options to evaluate their possible impacts on the well-being of the small farmers, before making a choice. Before a policy of inputs subsidization is adopted it will be relevant to examine the input use pattern of different categories of farmers. In the absence of proper information for policy formulation, the benefits of the policy may not reach the targeted category of farmers. Market interventions policies, like Minimum Support Prices and Procurement Price, affect only the farmers who have the marketable surplus. Such policies for development of agriculture and stabilization of prices do not affect small farmers because they do not generate marketable surplus.

In the current economic situation, characterized by globalization of markets and soaring food prices, there is need to recognize, characterize and measure the small scale agriculture with the objective of not only exploiting their full potential with a view to developing agriculture, but also to promote welfare of the small farmers – the men and women working tirelessly to produce the food, fodder and fibre which are the key inputs for many industries.

3. Data on small farmers

Measurement of contribution of small farms and the kitchen gardens to food and agriculture sector is important for ensuring completeness of statistics, and for reflection of full picture in the national accounts of the country. But before being able to quantitatively measure this component of agriculture sector, there is a need to define “Small farm/holding” and provide “standard classification for tabulations” so that data is comparable at international level. In many situations it may not be sufficient to group the farms into just two categories based on the scale of agricultural operations viz. small and big.

The FAO Programme for the World Census of Agriculture recommends that the holdings be classified into 18 size classes in terms of the “operated area”. The recommended classes are shown in Table-2.

Table 2: FAO recommendations on size classes for tabulation of data from agriculture census and their application in India

FAO recommendations	Classifications used in India	
	For statistical purposes	For policy purposes
Holdings without land		
Holdings with land		
<i>Less than 0.1 ha</i>	<i>Less than 0.02 ha</i>	Marginal Farmers (below 1 Ha)
<i>0.1 – 0.19 ha</i>	<i>0.02- 0.5</i>	
<i>0.2 – 0.49 ha</i>		
<i>0.5 – 0.99 ha</i>	<i>0.5- 1.0 ha</i>	
<i>1 – 1.99 ha</i>	<i>1-2 ha</i>	Small Farmers (1-2 ha)
<i>2 – 2.99 ha</i>	<i>2-3 ha</i>	Semi-medium Farmers (2-4 ha)
<i>3 – 3.99 ha</i>	<i>2-4 ha</i>	
<i>4 – 4.99 ha</i>	<i>4-5 ha</i>	Médium Farmers (4-10 Ha)
<i>5 – 9.99 ha</i>	<i>5-7.5 ha</i>	
	<i>7.5-10.0 ha</i>	
<i>10 – 19.99 ha</i>	<i>10-20.0 ha</i>	Large Farmers (over 10 ha)
<i>20 – 49.99 ha</i>	<i>20.0 ha and above</i>	
<i>50 – 99 ha</i>		
<i>100 – 199 ha</i>		
<i>200 – 499 ha</i>		
<i>500 – 999 ha</i>		
<i>1,000 – 2,499 ha</i>		
<i>2,500 ha and over</i>		

A review of 114 agricultural censuses carried out by FAO member countries during the reference period (1996-2005) of World Programme for the Census of Agriculture 2000 (WCA 2000) has indicated that:

- In Asia, out of 46 countries and territories, 29 have participated in the WCA 2000, of which only 17 countries reported data by size class of land area operated by holdings.
- In the Pacific, out of 21 countries and territories, 9 have participated in the WCA 2000, of which only 5 countries reported results by size class of land area operated by holdings.

Many countries, which reported data by size classes, use modified size classes to suit their own requirements, for policy purpose or otherwise, in a manner that makes international comparison difficult. Deviations from FAO recommendations are notable at lower size classes; see table at Annex-1 for details. The size classes recommended by FAO are quite elaborate and general and are recommended to all countries as tabulation classes, at least for number and area of holdings. These classes also permit the scope of regrouping the data to meet the national requirements for policy formulation.

In India the data collected through agricultural census is tabulated in 12 classes which are in close conformity with FAO recommendation (see table 2), but to meet the requirements of policy makers it regroup them in 5 major classes holdings viz. Marginal (below 1 ha); Small (1-2 ha), Semi-Medium (2-4 ha); Medium (4-10 ha); and Large (10 ha and above). While

most data from agricultural census is tabulated in 12 detailed classes, estimations from agricultural sample surveys are made for only for 5 major categories to have adequate sample representation in each size class for estimation purposes. Important census data is also presented for policy makers by 5 major categories of farmers. From the census results one could readily know the type of crop, input use and irrigation status of farmers in these 5 major categories. Such readily available data facilitates formulation of development policies favouring marginal and small farmers.

Census leaders face a challenge to adopt simplified class intervals for tabulation, when a number of “area measurement units” are used in a country. The tendency is to adopt simple class intervals in local units for facilitating the field work of data collection. When the data tabulated in local units is converted to “hectares” the limits of class intervals become complex. A possible solution to this problem could be to convert holding level data to a standard unit, e.g. hectare, before tabulation.

4. Characterizing marginal/small farmers

Categorization for farms according to scale of operation, particularly those in the household sector, is important for making appropriate policies for each section of the farming community. A differentiation is needed in the treatment, and hence in choice of policy instrument, of different categories of farmers due to their difference in the resource endowment, input use pattern, source of farm labour, use of output and market access.

For the collection of census information, an “agricultural holding” is defined as the economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, regardless to title, legal form or size. The holding could comprise more than one parcel located in one or more villages and the single management may be exercised by one household or jointly by two or more households or by a juridical person including authorized companies or public institutions.

Most countries, nonetheless, use some criterion to restrict this theoretical definition of an agricultural holding for practical purposes when conducting agricultural census and surveys. This approach is adopted to give importance to the knowledge of the contribution of “holdings that practise agriculture as gainful economic activity rather than just as a hobby”. The cut-offs based on scale of operations of holdings are also used to keep the surveys and censuses cost-effective and under manageable limits. But for statistical purposes it will also be important to have knowledge of activities which in their individual capacity may be tiny but together may be contributing significantly to the agriculture sector or to food security.

Out of 114 countries reviewed by the Statistics Division of FAO only two countries carried out sample surveys to assess the contribution of this small scale sector which remained outside the purview of the agricultural census. Restricting the definition of the holding without a follow-up survey to assess the contribution of excluded holdings, masks a part of distribution of holdings and does not permit us to know the full distribution of agricultural holdings. It will be desirable to have some knowledge of asset ownership status (scale of operation) of the entire population of agricultural holdings. This information could be a basis for deciding the threshold levels of holdings for coverage in the census/survey. Once the complete distribution of ownership of different types of productive agricultural assets is known, it will be possible to create scenarios on percentage coverage of the holdings and their contribution to agriculture under different options for choice of thresholds.

For deciding the threshold level for holdings and for categorizing the farmers (holders) based on the scale of their operations, usually the main underlying criterion is “economic contribution”. At operation level, this categorization is defined on the basis of one or more of the following factors:

- Land size,
- Heard size,
- Marketable/Marketed surplus/ Volume of sales, or
- Income earning potential of the holding.

The “operated land” is the most important variable for characterizing the scale of operations, except perhaps for nomadic livestock holdings, because the land is the basic agricultural resource and is most closely related to other variables of scale, e.g. volume of production, volume of sale, herd size etc. Often a complex criterion involving land, livestock and sales is used to categorize agricultural holding for the purpose of agricultural census and surveys, as well as for differentiated treatment in development policies. However, the use of such complex definition of agricultural holdings poses a challenge to international comparison of data on structure of agriculture. On the other hand, characterization of holdings solely based on land size ignores other productive assets or activities of agriculture, e. g., Livestock.

4.1 Selected country practices in Characterization of Small Farmers

A few examples of categorization of holdings in the agricultural census, in addition to case of India mentioned in the previous section, are given below:

(i) Sri Lanka Agricultural Census 2002

Estate or Plantation sector: Is an agricultural holding of 20 acres (8.1 hectares) or more in extent. In the case that different parcels add up to 20 acres, the holding is not considered an estate because the estate should have at least one parcel reaching 20 acres in extent. Similarly, a holding with 20 acres or more of purely paddy land is not considered an estate.

Small Holdings Sector (peasant): are those holdings not falling into the category of estates.

Marginal or Inactive Holdings: are those holdings reporting an area of less than 40 perches (0.11 hectares) and having an agricultural production mainly for home consumption.

(ii) Mozambique Agricultural Census 2000

Farms were classified as **small, medium or large**, on the basis of cultivated area and livestock population. The criteria used for categorization is summarized in the table below.

Factors (one of the following)		Small farms	Medium farms	Large farms
1. Cultivated area	without irrigated land, fruit trees or plantation	< 10 ha	10 – 50 ha	≥ 50 ha
	with irrigated land, fruit trees or plantation	< 5 ha	5 – 10 ha	≥ 10 ha
2. Number of head of cattle		< 10 head	10 – 50 head	≥ 50 head
3. Number of head of sheep, goats and pigs		< 50 head	50 – 500 head	≥ 500 head
4. Number of fowls		< 5000 head	5000 – 20 000 head	≥ 20 000 head

(iii) European Countries

Categorization criterion is based on income generating potential. **Standard Gross Margins** (or SGMs) are a way of classifying farms according to the type of enterprises on the farm, and their relative contribution to overall profit. The SGM provides a measure of a holding's business size, irrespective of its area and intensity of production. SGMs are used by Eurostat for collating European Union farm statistics. In the UK this classification is used for the June census of agriculture (annual).

SGMs are calculated per unit area of crops and per head of livestock, using standardised SGM coefficients for each type of crop and livestock. Different SGM coefficients are calculated for different geographical areas to allow for differences in profit. SGMs are representative of the level of profit that could be expected on the average farm under "normal" conditions (i.e. no disease outbreaks or adverse weather). Because the system of classifying business size was developed for use within the EU statistical network, SGMs are measured in euros and are presented in size ranges which relate to European Size Units (ESU). The resulting figures per hectare of crop and per head of livestock are then totalled for the whole farm.

Holdings are then categorized, for example in the UK, as:

Size of holding	SGM (euro)	European Size Units
Very small	less than 9,600	less than 8
Small	9,600 < 48,000	8 < 40
Medium	48,000 < 120,000	40 < 100
Large	120,000 < 240,000	100 < 200
Very large	240,000 +	200 +

(iv) South America

Personal enquiries with some NGOs in the region have indicated that some countries define Small Farms as the ones which are not dependent on external labour for agricultural activities on the holding. The farm labour in these holdings is mostly provided by the members of the farm household or family.

4.2 Recommendations of regional expert consultation in Asia and the Pacific

The Expert Consultation on Statistics in Support of Policies to Empower Small Farmers, held in Bangkok, Thailand, 8-11 September 2009, recommended considering sub-categorization in defining small farmers, taking into account factors such as productivity, cropping intensity and irrigation. Given the vastly heterogeneous agricultural practices in Asia and the Pacific, the Experts felt desirable to use subregional definitions for small farmers instead of an overall regional definition.

5. Conclusions and recommendations

FAO, for the purposes of international comparisons, fits a statistical probability distribution to the national data and redistribute the number and area of holdings as per standard size classes (in hectares). Implementation of such a procedure becomes difficult if the number of size-classes reported by the countries is too few. For facilitating cross-country comparison, FAO recommends to member countries to adopt a detailed distribution of classes for tabulation of “number and area of holdings”, at least for the purpose of agricultural census. For agricultural surveys an abridged version could be used.

In many countries the small and marginal farmers contribute significantly to the economy and to food security. The contribution of small farmers to agricultural GDP of the country would, however, depend upon the nature of crops sown by them. In order to evolve policies for the benefit of small farmers, we need to know the nature of agricultural practices followed by them, including crop and livestock species raised by them. Before the governments are able to make appropriate policies for empowering the small farmers, one will need information on a set of variables which affect the life and well-being of small farmers. A special sample survey to assess their contribution to the economy is required, particularly when cut-off limits have been used for the agricultural census.

It may not be a rare occasion when there exists a political will to support the welfare of small farmers but appropriate information is not be available. Such information can be made available without any additional cost if awareness about need for such information is recognized at the stage of planning of agricultural census and surveys. A number of interesting and useful cross tabulation are possible using the primary data from any agricultural census and survey. Some examples of such possible cross tabulation from agriculture census data to facilitate making policies for empowerment of small farmers are:

- ✓ Distribution of operated land by size class of holdings
- ✓ Crop areas under specific crops by land size class of holding
- ✓ Livestock type and herd size by land size class of holding
- ✓ Use and source of machinery by land size class
- ✓ Input use by land size class of holdings
- ✓ Fodder type used by animal herd size
- ✓ Credits availed by size of holdings
- ✓ Vaccination of animals by herd size classes of holdings

One main issue that remains to be addressed is whether we can make a uniform recommendation to all countries on the definition of small farmer. The Expert Consultation, held in Bangkok in 2009, made some recommendations regarding characterization of small farmers. These could be considered as important inputs to the global search for an international standard definition.

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Standard Gross Margins: A way of classifying farms

http://en.wikipedia.org/wiki/Standard_Gross_Margin

EUROSTAT: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

Annex 1 : Distribution of small holdings in Asia and the Pacific

Asia and Pacific Region	Total holdings with land	Total area (ha)	Percent of agricultural holdings under 0.5 ha		Percent of agricultural holdings under 1 ha		Percent of agricultural holdings under 2 ha		Average size of operated area per holding (ha)
			Number	Operated Area	Number	Operated Area	Number	Operated Area	
Asia (14 countries)	146319417	239563657	38.4	5.6	57.9	14.2	85.1	31.0	45.3
Cyprus	45 199	197 128	34.4	2	53.5	6.4	70.2	13.2	4.4
Georgia	725 766	886 766	40.2	7	69.7	24	92.7	47.5	1.2
India	119 894 000	159 394 000	42.7	7.7	62.9	18.7	81.8	38.9	1.3
Iran	3 480 729	17 665 198	n.a.	n.a.	27.8	2.3	39.9	6	5.1
Jordan	75 968	306 001	17.9	1.3	35.3	4.3	67.8	26.2	4
Kyrgyz Rep.	1 038 997	1 306 787	79.2	5.5	83.9	8.3	n.a.	n.a.	1.2
Laos P.D.R.	647 200	1 047 700	n.a.	n.a.	35.1	12.8	70.4	42.8	1.6
Lebanon	190 793	247 940	52.2	9	70.6	19.6	84.7	34.8	1.3
Myanmar (1)	3 453 850	8 721 115	14.9	0.7	33.4	5.5	56.6	19	2.5
Nepal	3 337 439	2 653 919	47.3	14.7	74.2	38.9	91.7	68.7	0.8
Pakistan	6 620 054	20 406 782	19.5	1.8	36.1	5.8	57.6	15.5	3.1
Philippines	4 822 739	9 559 958	20.2	2.4	40.1	8.7	68.1	25.8	2
Qatar	3 553	42 328	58.9	1.3	68.8	1.3	74.1	1.9	11.9
Turkey	3 022 127	18 434 822	5.9	0.3	15.2	1.3	32.8	5.3	6.1
Countries not reporting complete information on small holdings									
China (2)	193 446 000	130 039 200	83.2	n.a.	92.9	n.a.	97.8	n.a.	0.7
Sri Lanka (3)	3 264 678	1 531 461	17.3	7.8	33.9	26.3	n.a.	n.a.	0.5
Viet Nam	10 245 092	n.a.	67.1	n.a.	84.2	n.a.	94.6	n.a.	n.a.
Yemen	1 180 105	1 609 486	58.4	7.6	73.3	15.5	n.a.	n.a.	1.4

(continued next page)

Annex 1 (continued): Distribution of small holdings in Asia and the Pacific

Asia and Pacific Region	Total holdings with land	Total area (ha)	Percent of agricultural holdings under 0.5 ha		Percent of agricultural holdings under 1 ha		Percent of agricultural holdings under 2 ha		Average size of operated area per holding (ha)
			Number	Operated Area	Number	Operated Area	Number	Operated Area	
			Oceania (5 countries)	23916	63979	15.7	1.0	36.3	
American Samoa (2)	7094	7949	25.7	3.8	57.3	19	83.6	47.3	1.1
Cook Islands (3)	1721	1029	51.6	14.9	81.5	43.2	95.2	72.5	0.6
Guam (2)	153	667	10.5	0.4	30.1	2.7	45.8	6.7	4.4
North. Mariana Isl. (3)	214	952	2.3	0.2	26.2	3.3	53.7	10.6	4.4
Samoa (4)	14734	53382	6.9	0.4	19	2.1	50.8	13.2	3.6
Oceania countries not reporting complete information on small holdings									
Australia	140 516	45 572 300	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3243.2
New Zealand	70 000	15 640 348	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	223.4

The number in brackets refer to the footnotes below describing the classes used by countries for small sizes, viz.

- (1) Under 0.4 ha; 0.4 and under 1.2
- (2). Under 0.6 ha; 0.6 and under 1
- (3). Under 0.4 ha; 0.4 and under 0.8
- (4). Under 0.4 ha; 0.4 and under 1