

## CHAPTER 4

### Main Findings

#### 4.1 Scope of tables

4.1.1 PART TWO of this publication provides a series of 36 tables prepared with data extracted from national reports on agricultural censuses. Tables were prepared to provide a meaningful comparison with as much data as possible. An effort was made to include in the comparisons all the data conforming to the concepts and definitions recommended by FAO. However, in some cases, as explained earlier in Chapter 3, some approximations were needed. Footnotes are given in the tables, where necessary, to inform the users about approximations and variations in the concepts. Relevant concepts and definitions are given at the end of the publication to clarify any vagueness in the table headings which have been deliberately kept short for aesthetic reasons. Some non-standard indicators have been calculated and included in the tables for drawing conclusions. These have been clarified in the tables by indicating the formula used for their calculation. In case of doubt relating to data for any specific country, the user should refer to the national concepts and definitions followed for collecting and presenting the data, available in the national reports. The tables in the second part of the publication cover most of the conventional themes of agricultural censuses. An attempt has also been made to provide numbers by broad categories, particularly for crop groups, e.g., cereals, pulses, oilseeds, sugar crops, and livestock species groups.

#### 4.2 Highlights from the tables

4.2.1 From a rapid analysis of the tables to make a cross country comparison, it was possible to highlight the following main structural characteristics of agriculture worldwide.

##### *Trend in number and area of holdings*

Table 1.2 presents the number and area of agricultural holdings as available from agricultural censuses since the 1930 WCA round, which could be used to observe broad global, regional and national tendencies. While making comparisons over time and across countries, users should pay particular attention to the changes in the political boundaries, and methodologies, concepts and definitions used for the censuses. Information on this has been added as notes and footnotes to the table.

The structure of agriculture across regions and countries varies considerably on account of differences in topography, natural resources, climate and agricultural practices, as well as the diversity of human activities, availability of infrastructure and socio-cultural factors. Poor availability of comparable data at international level impedes the objective of tracking changes over time in different regions. There were only 66 countries that carried out an agricultural census in both the 1990 and 2000 WCA rounds, out of which only 61 reported both total number of holdings and total area of holdings. Table 7 provides totals for these 61 countries by regions.

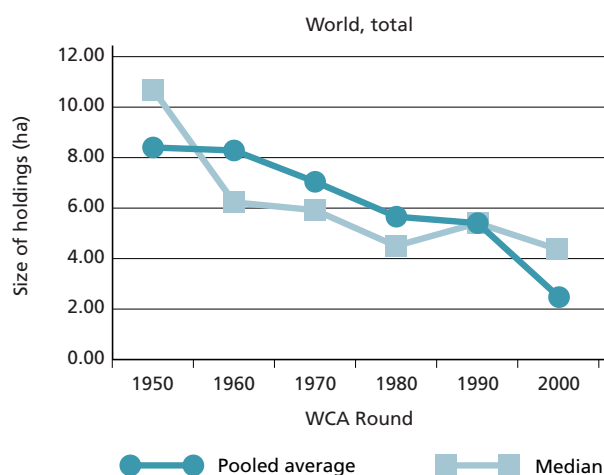
**Table 7. Number and area for holding in the 1990 and 2000 WCA rounds**

Region	WCA 1990		WCA 2000	
	Holdings (million)	Area (million ha)	Holdings (million)	Area (million ha)
1	2	3	4	5
<b>Total world [61]</b>				
Africa [9]	14	23	21	31
North and Central America [10]	3	462	3	450
South America [5]	8	605	7	593
Asia [12]	168	289	190	287
Europe [17]	14	206	11	182
Oceania [8]	0.2	484	0.2	472

If the countries covered in the regions are taken as a representative sample of their regions, it emerges that there has been an expansion of agriculture in Africa as the total area of the holding shows an increase of about 50 percent which is accompanied by similar increase in number of holdings. On the other hand a considerable fall in operated area of the holdings (about 12 percent) is witnessed in Europe. In Asia, while the area managed by the holdings has not changed much, there has been an increase of over 12 percent in number of holdings.

Map 3 shows average area per holding as obtained from the 2000 WCA round. Table 1.7 gives the average land size of the holding since the 1930 WCA round. In order to observe broad regional trends, both the pooled averages and the medians of national averages have been calculated. It is clear that during the last 50 years the median size of holding land in the world has become one quarter, from over 15 hectares in the fifties to about 4 hectares observed during the 2000 round (Chart 2). Furthermore, it is undoubtedly clear that while in Asia the holdings are becoming fragmented, a consolidation of holdings is taking place in Europe. This is evidenced by the fact that during the last five decades the average size in Asia has fallen from about 2.5 hectares to nearly one hectare, whereas in Europe it has grown from about 10 to 15 hectares. The increase in the size of holdings in Europe is perhaps a result of the drop in the number of holdings, which can be linked to structural changes arising out of technological developments in the agricultural sector, as well as the disappearance of smaller holdings due to the ageing of the holders. In Africa, the holding size declined during the sixties, seventies and eighties, perhaps due to redistribution of land in the newly emerging countries. A reverse trend has been observed during the period covered by the 1990 and 2000 WCA rounds (1986-2005). In North and Central America, with the exception of United States and Canada, there is a general tendency of decline in the size of holdings. In South America, the leading meat producer countries like Argentina and Uruguay have big holdings and an increasing trend in the size of holdings. The general tendency in the region including in Mexico and Brazil, however, is towards a declining size of holding. In Oceania, both Australia and New Zealand have an increasing trend in size of holdings, whereas other islands of the region have shown some mixed trends, though the general tendency is towards fragmentation of land and smaller holdings.

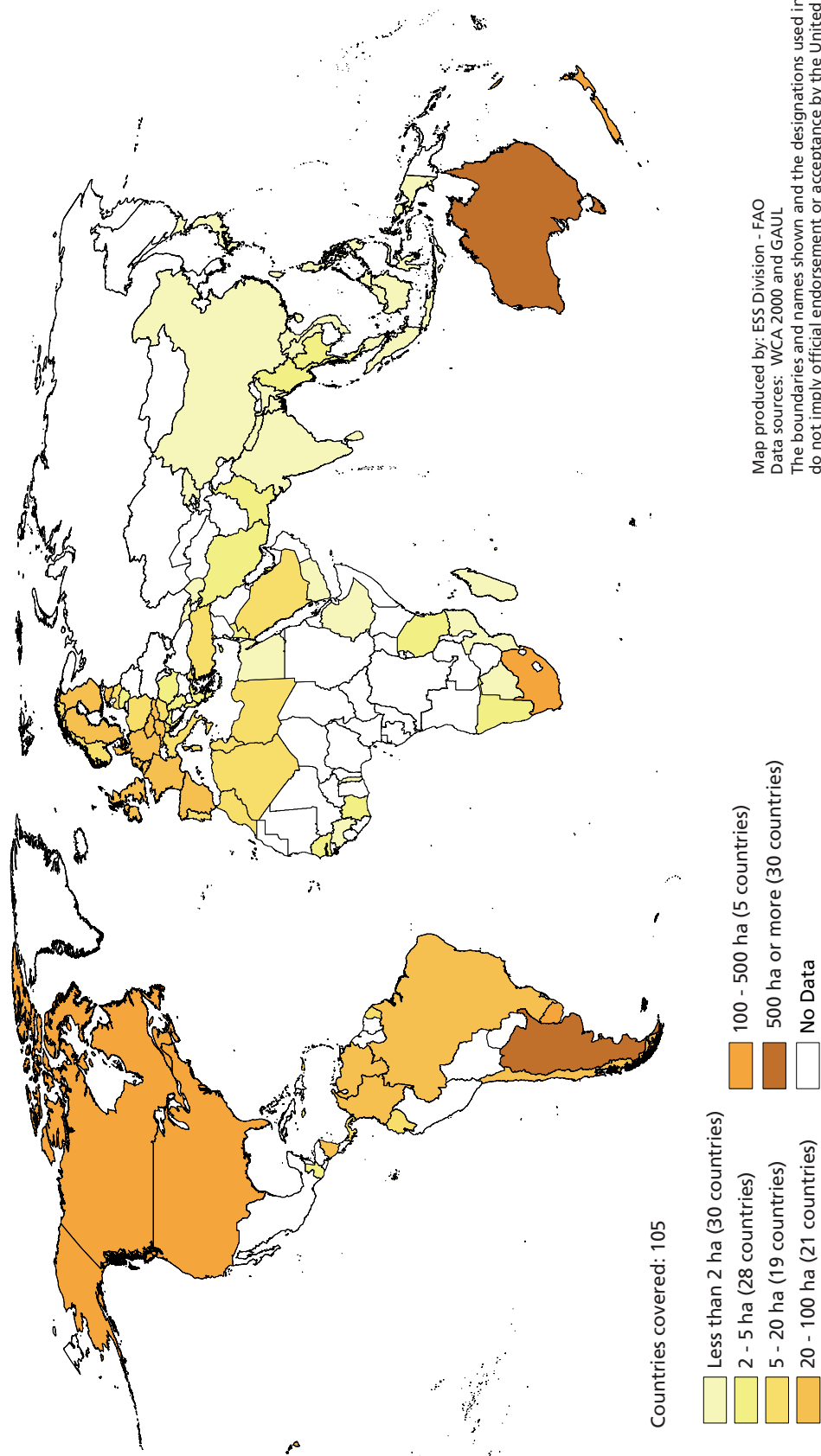
**Chart 2. Global trend in average land size of holding**



### **Distribution of land holding**

**4.2.2** Table 1.4 presents the number and area of the agricultural holdings in the reporting countries by size classes, and Table 1.6 gives the average land size of holdings and number of parcels per holding. These tables show a large diversity across the world in the average size of holdings and the distribution of holdings by size. For instance China has almost one hundred times more holdings than the US. But the total area of the Chinese holdings represents one third of the area of the US holdings. Thus the mean size of Chinese holdings is about 250 times lower than the mean size of the US holdings (0.67 ha against 178 ha). Also the mean size of Chinese holdings, as well as most of the Asian holdings, is about 5000 times smaller

Map 3.  
Average area per holding (1996-2005)



than the average size of an Australian holding, which is an incredible 3243 ha, certainly due to prevalence of extensive livestock raising practices. Just to clarify the scenario further, not more than 10 percent of farms in China are bigger than 1 ha, but only about 10 percent of farms in the USA are smaller than 5 ha. This is also greatly reflected in the distribution of holdings by size: out of 193 million Chinese farms, 180 million farms are less than 1 ha, representing over 93 percent of the Chinese farms. Vietnam and Indonesia also have 85 percent and 75 percent farms respectively below 1 ha.

**4.2.3** Seven countries that have a remarkably huge mean farm size are: Australia (3243 ha), Argentina (583 ha), South Africa (288 ha), Uruguay (287 ha), Canada (273 ha.), New Zealand (223 ha), and the US (178 ha). For all other countries the mean size never exceeds 100 ha. The situation is however really varied by continents:

- **In Africa**, except South Africa, the mean size of holding is generally equal to or less than 10 ha (10.45 in Libya and 10.24 in Tunisia represent the maximum). Some African countries notably have even very low mean size of holdings: Madagascar 0.86 ha, Egypt 0.83 ha, Cape Verde 1 ha, and 0.07 ha in Comoros; This may qualify just as backyard-gardening and not real agriculture if one considers Australian definitions of an agricultural holding.
- **In North and Central America**, very large holdings are found in the US and Canada. Nicaragua with over 31 ha as the average size represents maximum, among the remaining countries in the region.

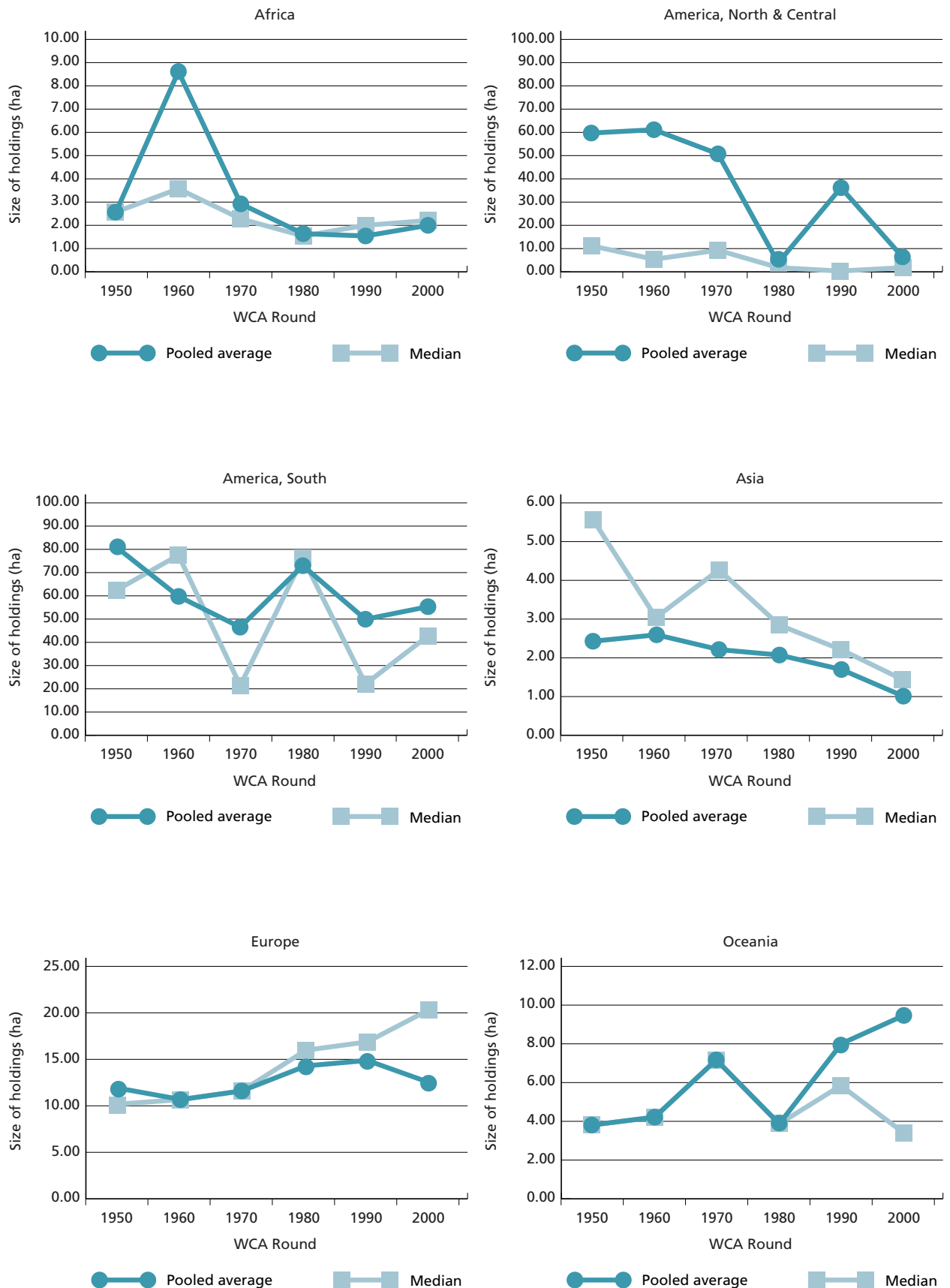
Notes:

- These charts are based on Table 1.7
- In calculating the medians and pooled averages the outlier countries (Namibia, South Africa, Australia, New Zealand, Argentina, Uruguay, Canada, United States of America) have been excluded.
- For each WCA round the median reported here is the median of the average size of holding in all reporting countries.
- **In South America**, in addition to Argentina and Uruguay already mentioned, some other countries have also quite large holdings: Chile (83.74 ha) and Brazil (72.76 ha);
- **In Asia**, no country has an average holding size bigger than 5 ha, except some countries of the Near East: Saudi Arabia (16.70 ha) and Qatar (11.91 ha);
- **In Europe** no country average exceeds 100 ha, but a number of countries have quite large holdings, e.g. Czech Republic (99.28 ha), Sweden (93.87 ha), Finland (72.24 ha) and UK (70.86), and about 10 countries have a holding size between 10 and 50 ha;
- **In Oceania**, huge holdings are found in Australia and New Zealand, and very small holdings in all other islands, except New Caledonia (51.95 ha).

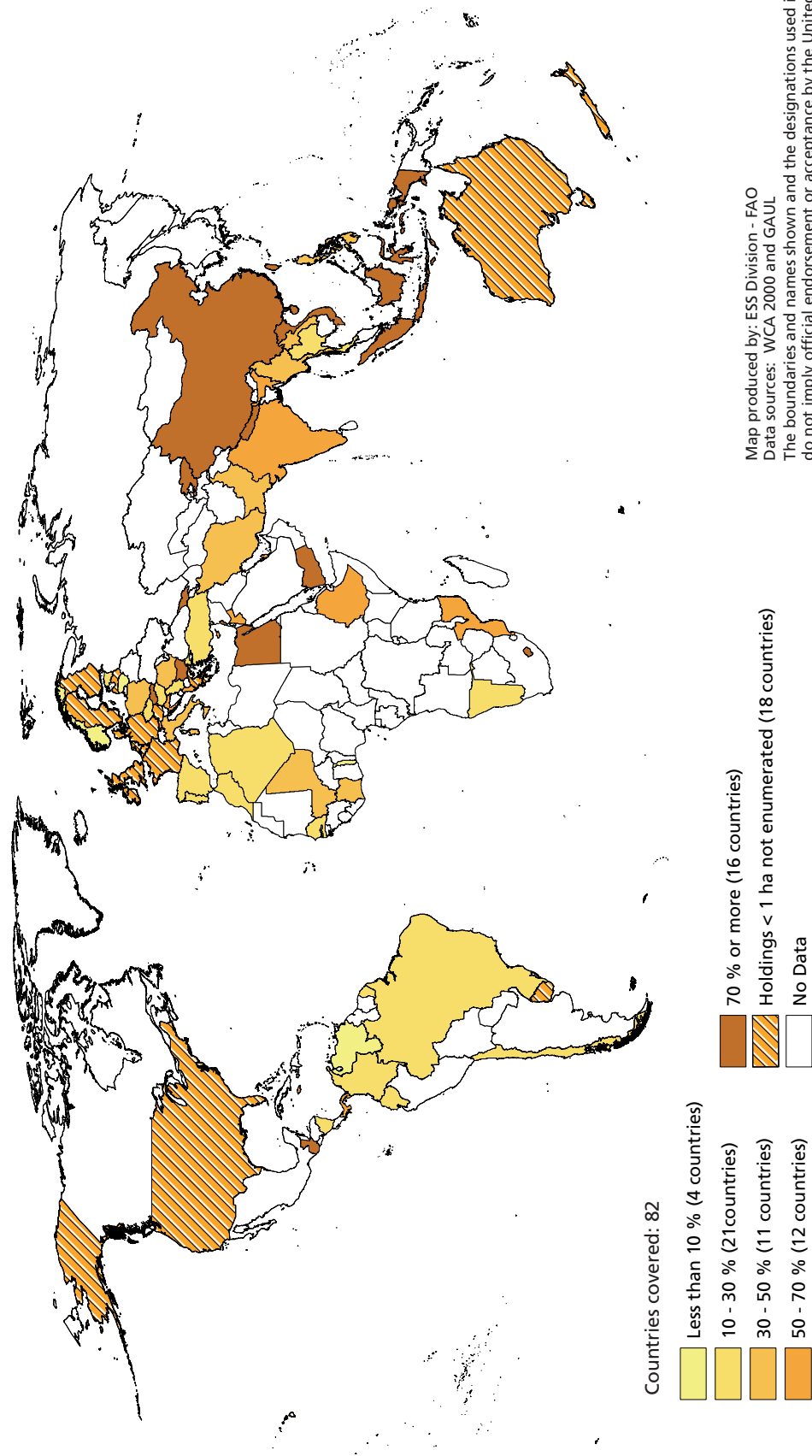
These marked differences make it obvious that any cross country comparison, by average or any other criteria, will need to consider the wide differences in the scale of operation of Australian or US farms on one hand and the Asian farm on the other.

**4.2.4** Map 4, prepared on the basis of Table 1.6, shows the proportion of small farms (with less than 1 ha of land). The highest proportion of these small farms is found in Asia and Pacific which is followed by West Africa. Australia, European countries and United States that do not enumerate small farms, perhaps because they do not exist or they do not contribute significantly to the agricultural output of the country. A study of 14 countries in Asia indicated that 77.2 percent of agricultural holdings were below 1 hectare and these accounted for 13.5 percent of the operated area. If we extend the limit to 2 hectares, over 88 percent of holdings accounting for nearly 30 percent of agricultural land is covered. In five Pacific countries, viz. American Samoa, Cook Island, Guam, Marina Island (north) and Samoa, 35 percent of holdings of 1 hectare and below manage only 5 percent of total area. Holdings below 2 hectares account for 64 percent of total holdings and operate only 18 percent of land. It is noted from the 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.

Charts 3. Regional trends in average land size of holdings



Map 4.  
Proportion of farms with less than 1 ha of land



There does not exist a commonly accepted definition of a small farm. For the purpose of international comparison, we arbitrarily divided the holdings into three size classes (0-5 ha), (5-50 ha) and above 50 ha. Table 8 indicates that globally over 94.3 percent of the holdings are of a size below 5 hectares, indicating the existence, to a large extent, of small subsistence or semi-subsistence family farms at world level. With 5 hectares as a ceiling for a small farm, in Asia 97 percent of farms are small, in Africa 91 percent and in Europe 72 percent. Farms below 5 hectares operate nearly sixty percent of land in Asia and nearly half the land in Africa. In Oceania, excluding Australia and New Zealand, farms below 5 hectares are operating 40 percent of the land. Farms over 50 hectares are found mostly in the Americas and in Oceania (Australia and New Zealand).

**Table 8. Percentage of holdings in different size classes of operated area**

Region	Total	Size classes of operated area		
		0 – 5 ha	5 – 50 ha	above 50 ha
1	2	3	4	5
<b>World level [85]</b>	<b>100</b>	<b>94.3</b>	<b>5.0</b>	<b>0.7</b>
Africa [14]	100	91.9	7.9	0.1
America, North and Central [10]	100	41.2	32.1	26.7
America, South [7]	100	43.9	40.6	15.5
Asia [19]	100	97.1	2.8	0.0
Europe [29]	100	72.5	23.4	4.0
Oceania [6]	100	34.6	29.5	35.9

**Land fragmentation**

4.2.5 Table 1.6 alone does not permit a general assessment of the trends in fragmentation or consolidation of land belonging to holdings, which could be gauged using the data from previous rounds. A snapshot of fragmentation of land managed by agricultural holdings during the 2000 WCA round is nonetheless possible. While globally the average number of parcels per holding between 2 to 3, the highest average number of parcels (over 10) is noted in Spain which is followed by Morocco with over 6 parcels on average per holding. Cyprus, Turkey, Serbia and Croatia, on average, have between 4 to 5 parcels per holding. African countries have in general less than 2 parcels on average per holding, with the exception of Uganda, Ethiopia and Morocco. In South America only two countries reported the number of parcels per holding: The Bolivarian Republic of Venezuela (about 1 parcel per holding) and Chile (1.6 parcels per holding). In Asia, with the exception of Jordan (1.2 parcels per holding), Cyprus (4.9 parcels per holding) and Turkey (4.0 parcels per holding), the reporting countries registered between 2 to 4 parcels per holding. European countries, with the exception of Spain, reported between 3 to 5 parcels on average per holding. The three reporting countries from Oceania had between 1 to 3 parcels on average per holding.

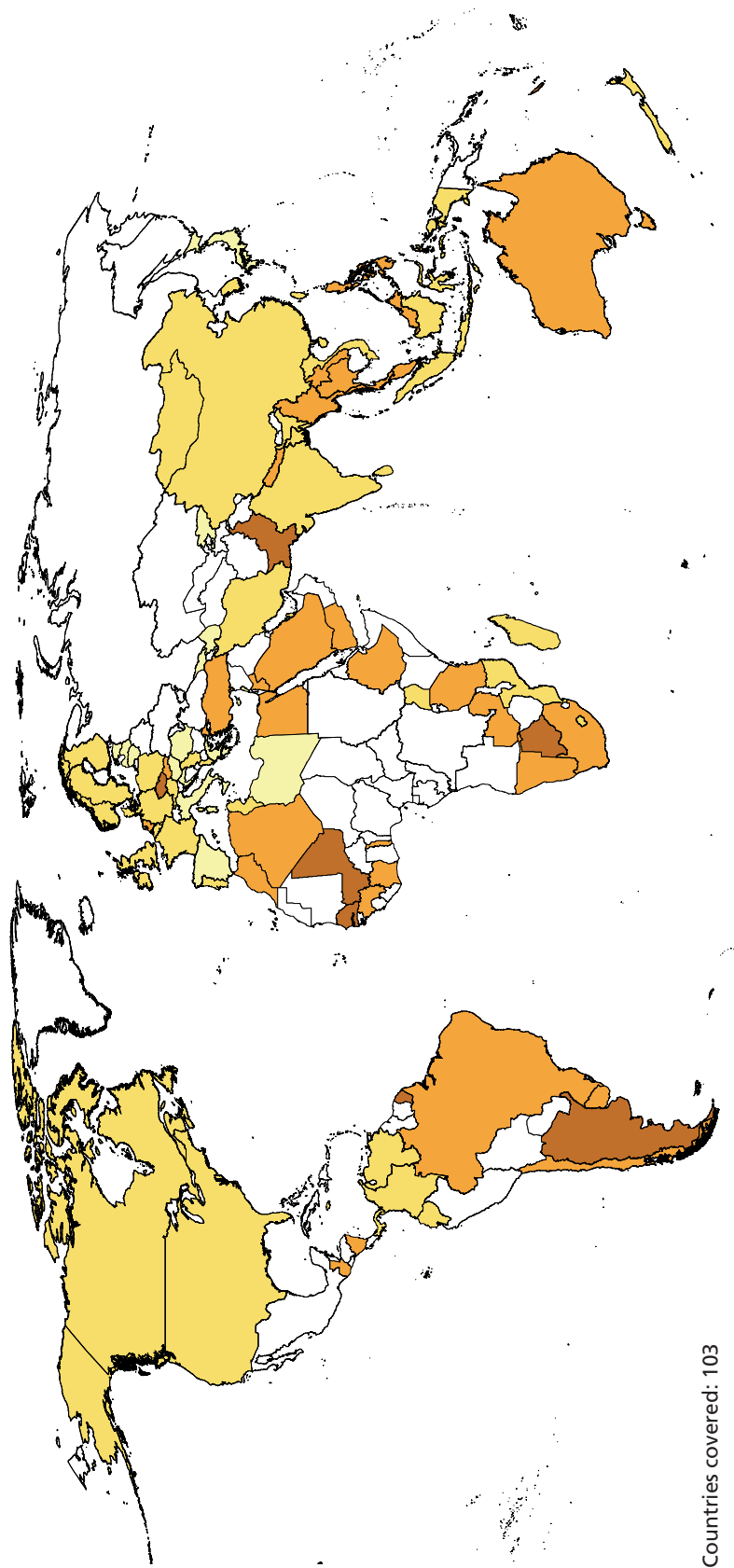
**Importance of agriculture**

Table 1.3 shows the share of area operated by agricultural holdings in total country area and the agricultural population per holding. At aggregate, agricultural holdings occupy nearly 30 percent of the total area of the 114 countries covered by the review, and each holding on average supports 4 to 5 members (map 5).

Agricultural population per holding is high in Africa, South America and Oceania. The average for Asia (4.4 persons per holding) is close to the global average, on the other hand, countries like Myanmar, Pakistan and Saudi Arabia have still high number of agricultural population per holding, perhaps due to joint family traditions.

A review of share of area operated by agricultural holding at regional and country level indicates the importance of agriculture in Europe, South America and Oceania. The United States, Bangladesh, and India also have large shares.

Map 5.  
Agricultural population: persons per holding



Map produced by: ESS Division - FAO  
 Data sources: WCA 2000 and GAUL  
 The boundaries and names shown and the designations used in this map do not imply official endorsement or acceptance by the United Nations.



### Gender

**4.2.6** Most agricultural holdings in the world are managed by males. In all continents, among the 56 countries which reported data by gender (see Table 2.1), the share of holdings managed by females out of total holdings, is generally less than a quarter. The situation in Europe is more equitable than in Asia and Africa. Whereas in Europe female headed holdings account for nearly 37 percent of holdings, in Asia and Africa only about 15 percent of holders are female. In Europe Romania in Europe and Cape Verde in Africa show a balanced situation. This situation is perhaps because men have migrated for better work opportunities. An in-depth analysis of the gender aspect of agriculture is presented in the *State of Food and Agriculture: Women in Agriculture* (FAO, 2011).

The gender of the agricultural holder may not be the most suitable indicator for measuring the contribution of holders in all situations. In Africa, due to tenurial arrangements and practices relating to the management of a family's productive assets, the sex of the holder is not a valid indicator for measuring contribution of women, particularly in regions where the land owned by the head of the household is allotted to female members of the family for their independent management. A concept of sub-holder has been used in these situations which reveals a much greater role for women in agriculture than is usually visible from tabulations based on the sex of the holder (FAO, 2005b).

### Land tenure

**4.2.7** Data on tenure of holdings according to the FAO classification, available from 22 countries, is presented in Table 3.1. Land owned by the holder or held in owner like possession represents the most common form of land tenure on the agricultural holding. In most of the countries, the land on over 50 percent of the holdings completely belong to this category.

More than half of the area on which data are available is declared in 'holdings operated under more than one form of tenure'. This might be related to the size of the farms: the greater they are, the more fragmented they may be and, therefore, many forms of tenure for the various parcels may be present there. Unfortunately, it was not possible to confirm this hypothesis as none of the countries with large farms reported data on fragmentation. The distribution of area of holding by tenure of land operated may be seen in Table 3.2.

### Legal status of the holder

**4.2.8** Only 57 countries reported data on this aspect. Investigation of this theme was recommended by FAO because of the economic importance of farms managed by juridical (public or private) persons: they may not be numerous in a country, but may occupy a large part of the national productive resources and employ many workers. Table 4.1 gives the break-down of the number and area of holdings managed by "civil persons" and "others (institutions)". The available data on form of management of holding seem to confirm the hypothesis that institutions, though few in number could manage large chunks of land. In most of the countries, farms managed by juridical persons are fewer than 10 percent. Only four countries have more than 10 percent of the farms managed by juridical persons: France 19.0 percent, Uruguay 13.7 percent, UK 11.9 percent and USA 10.3 percent. But they control quite a significant part in national economies: for instance in Uruguay these farms managed 38 percent of the total area, and in the USA about 34 percent of the total area of all holdings.

### Demography and farm labour"

**4.2.9** Table 5.1 presents available information on demography of farm and source of farm labour. The general conclusion is that agriculture is no more a sector which absorbs labour from outside. Of the 75 countries reporting on employment, 57 reported using hired workers; 55 of them reported that there were, globally, less hired workers than holdings in their country. Only two countries had more workers than holdings: Puerto Rico with 1.8 workers per holding and the USA with 1.4. Globally the 250 million holdings in these 57 countries (including China)<sup>9</sup> employed 22 million workers, which is less than 1 worker per

---

<sup>9</sup> This set of countries represents 250 millions of holdings out of the 500 millions in the 114 countries having their census in the 2000 round, a quite significant sample to confirm the assertion.

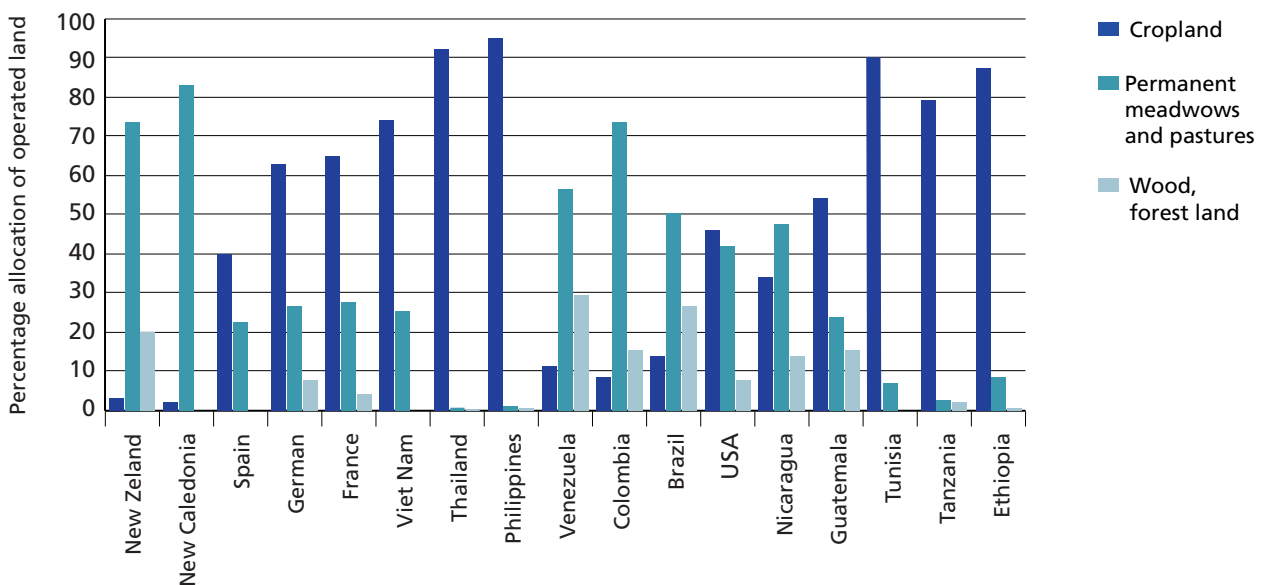
10 holdings. The hiring of workers for agricultural activity, except perhaps for some specific production process such as industrial crops, market gardening or to meet seasonal demand, does not seem to be a common practice in most countries.

Conversely, agricultural farms remain an important source of employment for household members of holders. In effect, of the 36 countries reporting on employment of household members, it appears that 232 million holdings employed 596 million members of households, that is, on an average 2.58 household members work on the agricultural holding. China reported that 519 million household members were engaged in agriculture on 193 million holdings having 800 million persons, that is, 2.7 agriculture workers in each household of 4 persons.

### Land use and cropping intensity

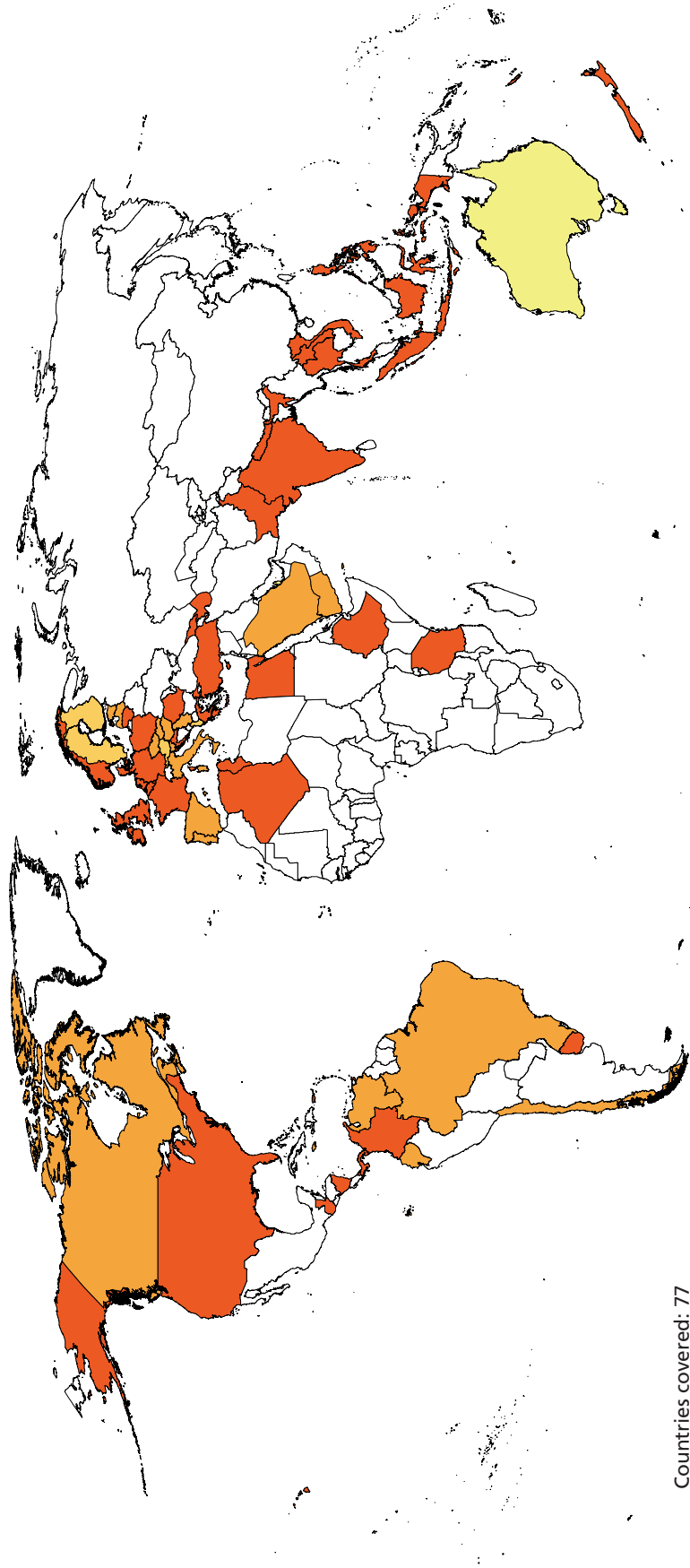
4.2.10 Chart 4 below prepared on the basis of data on a sample of large countries, extracted from Table 6.2, describe the features of main land use over continents. It presents some interesting feature and pattern. Map 6 based on table 6.1 presents the use of land for agriculture purposes in different countries.

Chart 4. Land use for crops, permanent meadows and pastures, and forests



- In **Asian and African countries**, cropland is the biggest part of the area of holding; in other words, in these countries holders tend to limit the activities on their holding to mainly crop cultivation. Since livestock are also present, meadows and pastures may be someone else's property, perhaps collective and/or public meadows which are not being counted in the agricultural census. Existence of nomadic livestock is not an uncommon feature in Asia, particularly central Asia, and Africa. Map 7 presents the global picture of share of cropland in the land operated by holdings.
- On the other hand, holdings in **America (North and South) and Oceania** generally encompass a great part of permanent meadows for their animals. They are also the ones keeping significant areas of woodland and forests on their holdings, perhaps in view of organising rotation with meadows. The share of cropland seems to be minimum in countries of South America, confirming that livestock keeping is the main agricultural activity in this region.
- **European countries** present a more balanced situation with between half and three quarters of the area of holding serving as cropland, about a quarter for meadows and less than 10% devoted to wood and forest.

Map 6.  
Percentage of cropland in operated land



Countries covered: 77

- Less than 25 % (15 countries)
- 25 - 50 % (17 countries)
- 50 - 75 % (20 countries)
- 75% or more (25 countries)
- No Data

Map produced by: ESS Division - FAO  
 Data sources: WCA 2000 and GAUL  
 The boundaries and names shown and the designations used in this map do not imply official endorsement or acceptance by the United Nations.

**4.2.11** Due to limitations in data it is difficult to precisely calculate cropping intensity. Nonetheless, a rough and ready calculation presented in Table 6.3 indicates that the practice of intensive cultivation of land (viz. repeated cultivation during a year) is more common in Asia and Africa than in Europe and the Americas. This seems to be more a tropical phenomenon as the climate offers better opportunities. Egypt with a cropping intensity of over 200 percent indicates that most farmers take at least two crops a year. The other countries with high cropping intensity include Ethiopia, Jamaica, Myanmar, Nepal, Pakistan and the Philippines. Among the countries with high cropping intensity, Egypt, India, Pakistan and Nepal have dedicated large areas to food cultivation.

### Crops

**4.2.12** Of main crops, Asian countries reporting census results, cultivate nearly 90 percent of the global area under rice (India 44.2% and China 28.6%), nearly fifty percent of the area under wheat and forty percent of the area under maize. These ratios confirm the hypothesis that Asian countries tend to concentrate on the cropping of basic cereals, which are the mainstay of their diets. Globally speaking, more than half of the area under cereals is located in Asian countries. However, shares of production may be distributed differently over continents, because of differences in yields as well as in number of harvests per year (for rice for example). The scale of production of a commodity differs from country to country; the largest wheat growing farms are in the Americas: Canada (149 ha of wheat per holding), USA (109 ha.) and Uruguay (101 ha) whilst the same ratio in Asia is only 0.9 ha of wheat per holding in India (no figure available for China, but we can expect the same order of magnitude). Table 7.1 presents area under main cereals reported by countries.

Among the countries reporting area under leguminous crops India has the highest area. This is not surprising, as in a predominantly vegetarian country pulses are the main source of protein in daily diet. Other important growers of legumes are: Brazil, Canada, Myanmar, Ethiopia and Tanzania. Brazil and India are the leading growers of sugar crops, mostly sugarcane. The dominant sugar crop in Europe is sugar beet. The United States and India are the leading temporary oilseeds growers. Tanzania and Brazil have dedicated large areas to cultivation of roots and tubers. In Europe, every country is growing roots and tubers, mostly potatoes.

### Livestock

**4.2.13** Table 8.1 shows livestock population by groups of species. Generally speaking, comparison on livestock are not so easy due to the fact that firstly not all countries reported on each species, and, secondly, countries often do not report on the number of holdings rearing livestock by species. Hence comparison on concentration or mean size of herds is rarely possible. While making comparison, it is believed that if a particular species is important for a country, it is more likely to appear in its agricultural census. Conversely, the species not reported in the census of a country is more likely to be less important species for the country. This belief makes us move forward with some comparison. As the results bear only on countries reporting census results, the percentages used below are widely rounded. Just considering absolute numbers of heads at country level leads to the following key observations for the main species.

### Cattle

**4.2.14** Table 8.2 presents information on the number of holdings rearing cattle and the total number of heads on the holdings in each country. Cattle is the species which seems to be widely spread over the planet. Among African countries, the biggest stock of cattle is in Ethiopia. In North and Central America the USA owns about 80 percent of cattle. In South America it is Brazil which owns about 60 percent of cattle, a herd more than three times larger than in the Argentina which is the next largest cattle owner. Also about 60 percent of cattle in Asia are in India, much higher than China which owns a bit more than 20 percent of the Asian cattle stock. In Europe, France has about 20 percent of the stock, but the French stock represents only 2 percent of the total number of cattle worldwide.

4.2.15 The concentration ratios<sup>10</sup> for cattle cannot be calculated for all countries, but it is certainly not the countries with the largest stock of cattle which also have the highest concentration ratios (intensive raising on the holding). In Asian and African countries for which ratios are available, the mean herd size never exceeds 40 animals per holding (38 in Botswana and 27 in Japan, ignoring Cyprus which has so few holdings). In most of the European countries individual herds are often between 40 and 100 heads (96 in the UK). The largest herds of cattle are certainly to be found in America (94 in the USA; 127 in Canada; 212 in Uruguay). In Oceania, Australia is at the top of the world list of countries with the largest cattle herd concentration, with an average of 351 heads of cattle per holding.

Chart 1. Number of holdings with cattle

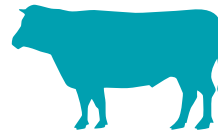
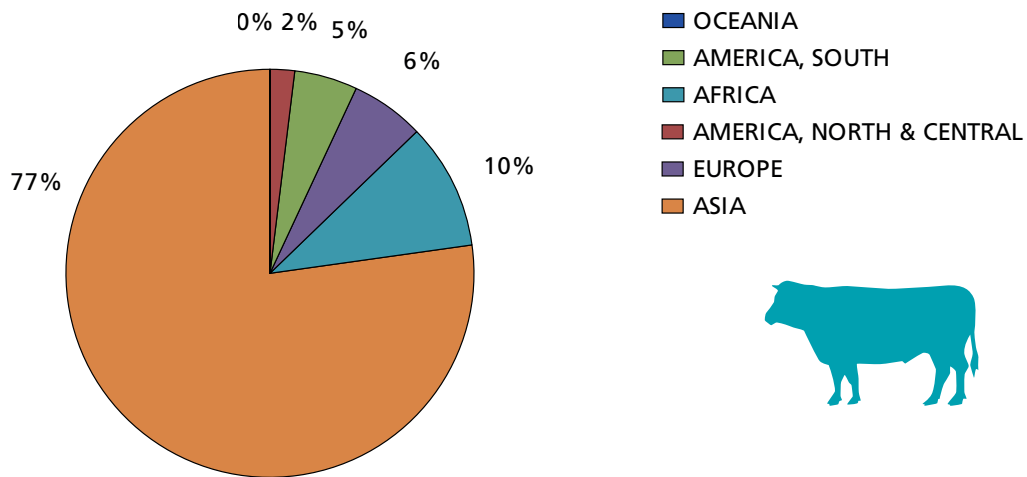
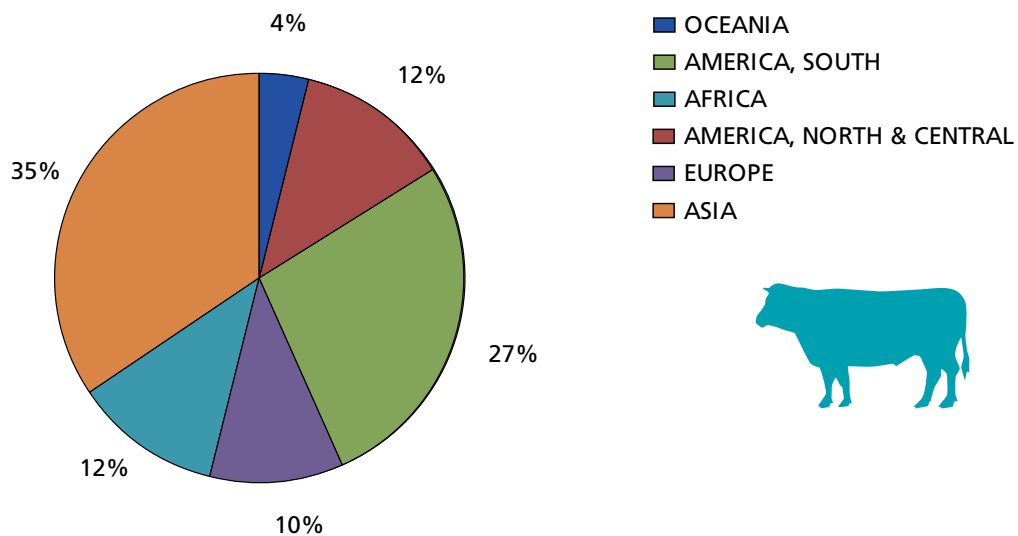
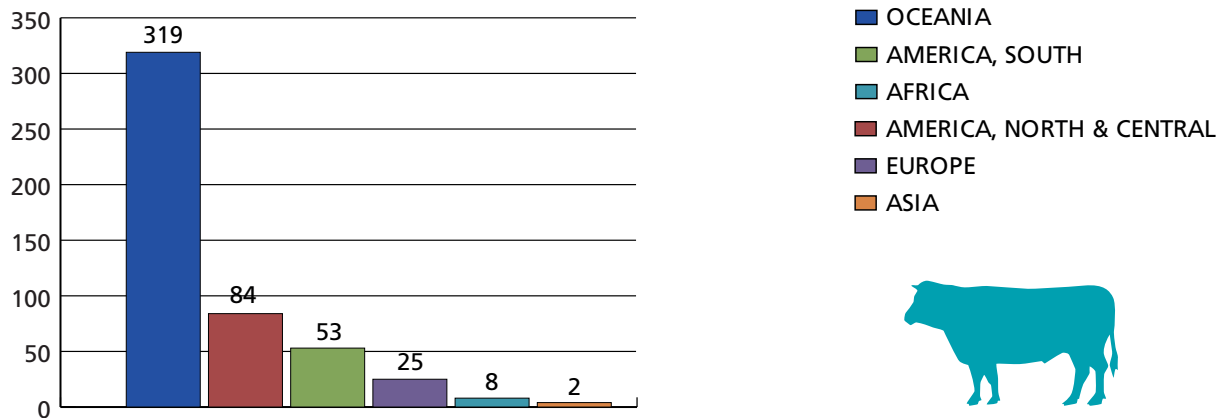


Chart 2. Number of heads of cattle



<sup>10</sup> average herd size on a holding to indicate the intensity of raising

Chart 3. Distribution of cattle by region



### Buffaloes

4.2.16 Table 8.3 gives information on buffaloes for 21 countries. Asian countries keep 97 percent of buffaloes. India alone had 62 percent of the buffalo population reported by the 21 countries, while China has only 13 percent. However, it is worth mentioning some specific location of herds of buffaloes in South America; in Brazil, but also 500 holders in Venezuela who raise more than 62 000 buffaloes altogether, that is 117 heads per holding. In Italy, about two thousand holders raise about 182 thousand buffaloes, with average heard size of 90 buffaloes. The highest buffalo concentration in the world is in Australia, where 15 farmers report 7327 heads of buffalo, with an average of 488 heads per holding.

Sheep

4.2.17 Table 8.4 refers to sheep. It is commonly believed that sheep are mostly raised in Oceania. In fact, it is principally a matter of concentration, even if Australia and New Zealand have together about 150 million sheep, with just over two thirds in Australia, and less than one third in New Zealand. The Oceania herd represents a little more than 20 percent of the world herd. The mean size of the individual herd in Australia reaches about 2227 heads per holding (no figure available for New Zealand).

4.2.18 The Asian countries raise about 40 percent of sheep (with almost as many sheep in China as in Australia). African countries also have a significant share (16 percent) in the world sheep stock, principally located in Maghreb (Algeria and Morocco), Ethiopia and South Africa. European herds of sheep are about 16 percent, with peak concentration in the UK where the mean size of individual herds is more than 500 heads per holding, triple the Spanish herds which are second in Europe for sheep concentration.

Chart 4. Number of holdings with sheep

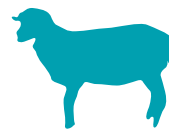
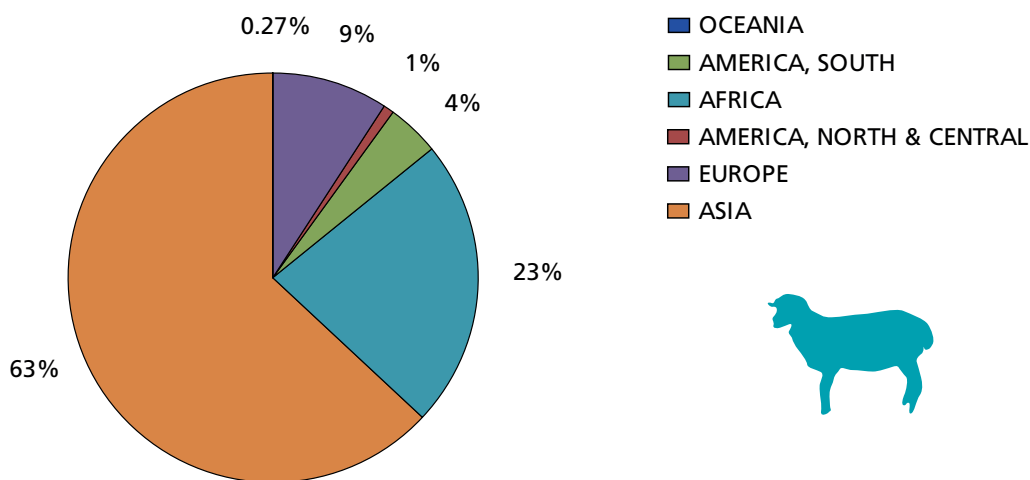


Chart 5. Number of heads of sheep

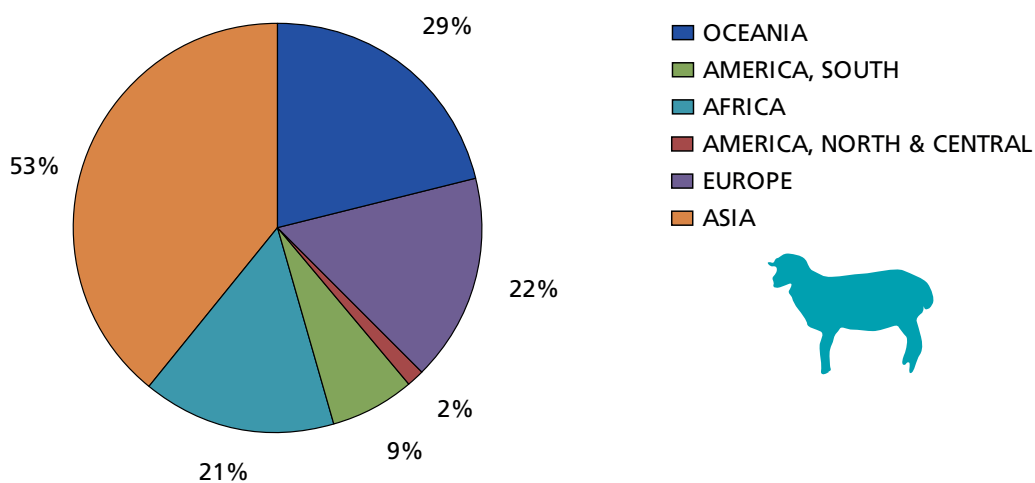
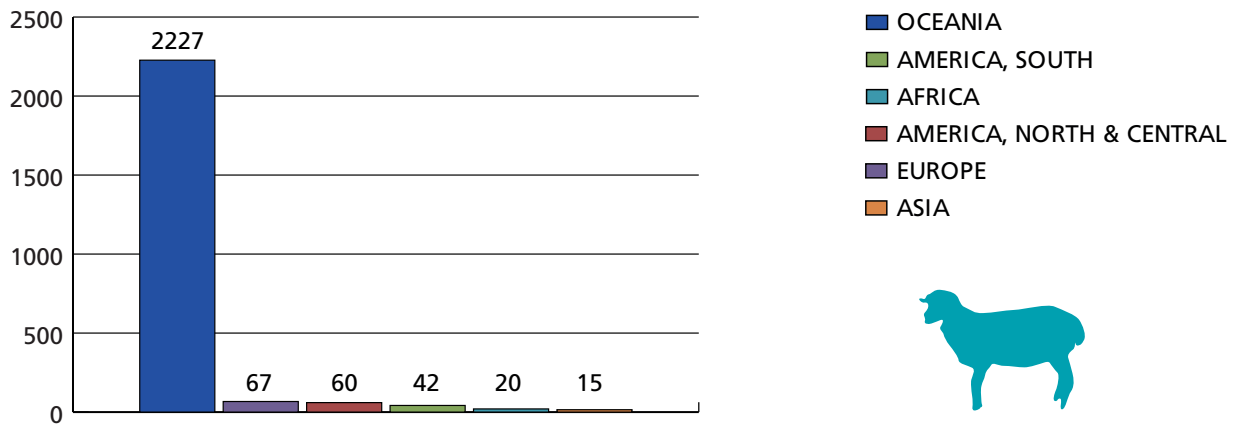


Chart 6. Average number of sheep heads per holding

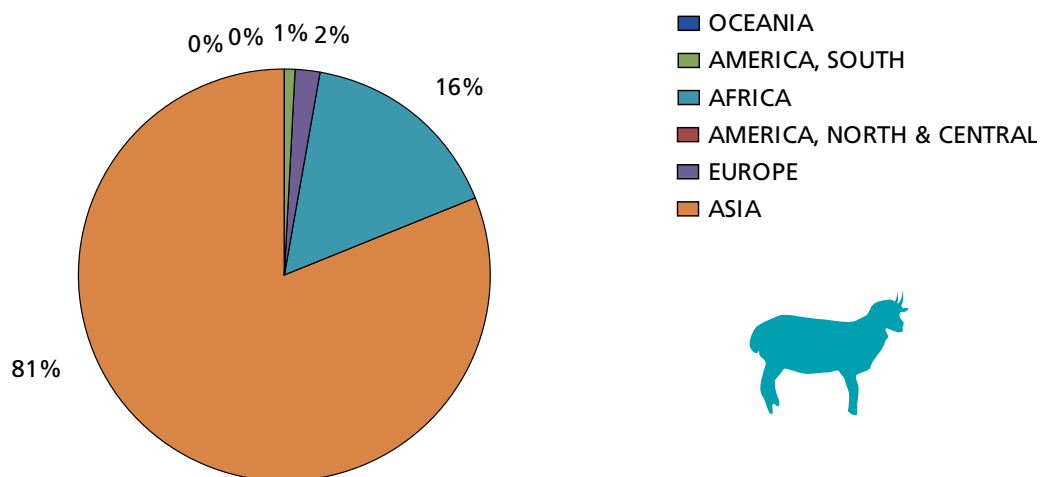




**Goats**

4.2.19 Table.8.5 provides information on goats from 99 countries. Three quarters of goats are raised in Asian countries (China, India and Pakistan mostly), with less than 4 percent of goats in America, and 3 percent in Europe with almost half of them located in Greece. In Africa, Ethiopia and Tanzania there is the largest goat population, though big heard sizes are reported in Botswana, Morocco and South Africa. Globally speaking, the largest heard sizes are found in Qatar, Lebanon, Saudi Arabia and Cyprus.

**Chart 7. Number of holdings with goats**



**Chart 8. Number of heads of goats**

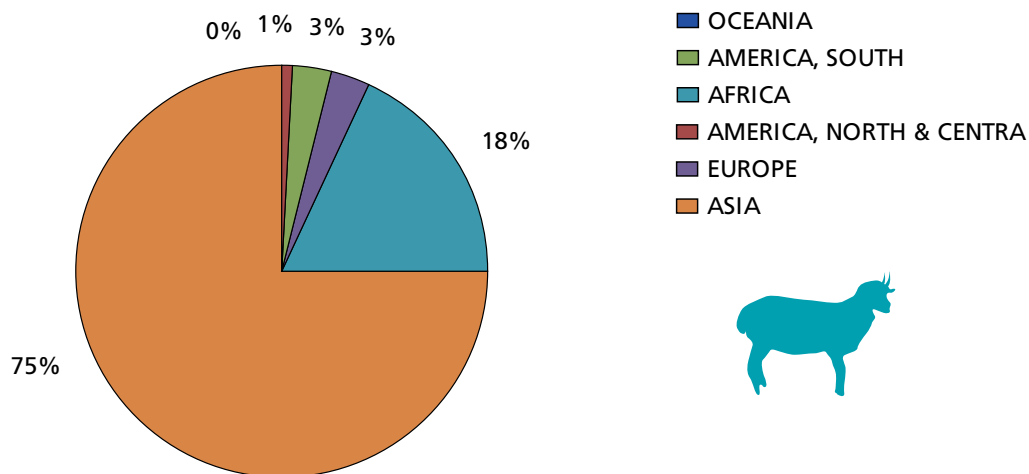
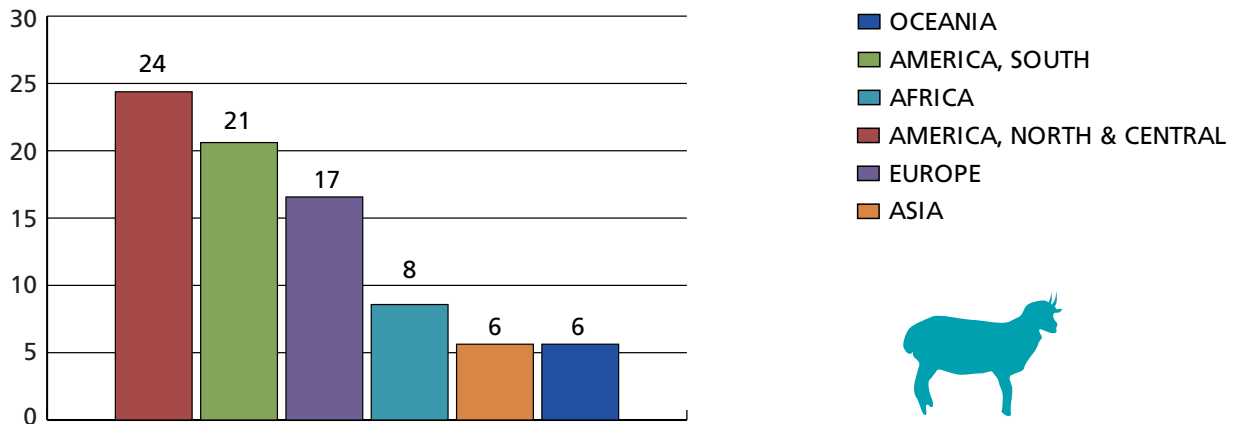


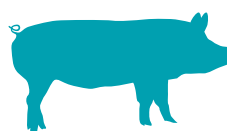
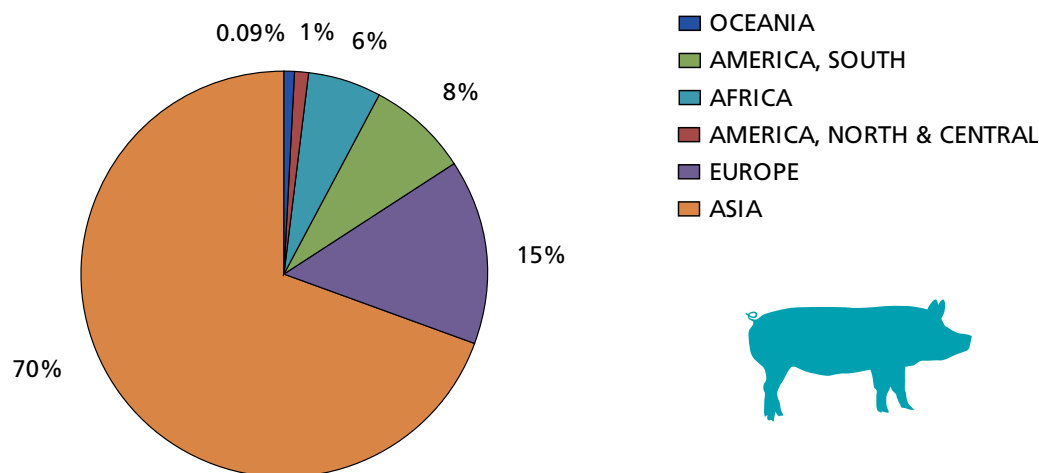
Chart 9. Average number of ghoat heads per holding



**Pigs**

4.2.20 Table 8.6 refers to information on pigs from 93 countries. About 56 percent of pigs are raised in Asian countries, mainly in China, which has more than 90 percent of the Asian pigs in its territory. European countries are also importantly involved in raising pigs: they, altogether, raise 25 percent of pigs worldwide, practising mostly intensive raising with impressive peaks of concentration such as 1354 heads per holding on average in Ireland, 826 in Netherland, 751 in Denmark, and 720 in Belgium (comparable to 765 in the USA). In Australia the average number of pigs per holding is 790.

**Chart 10. Number of holdings with pigs**



**Chart 11. Number of heads of goats**

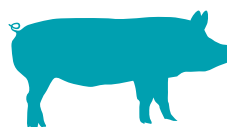
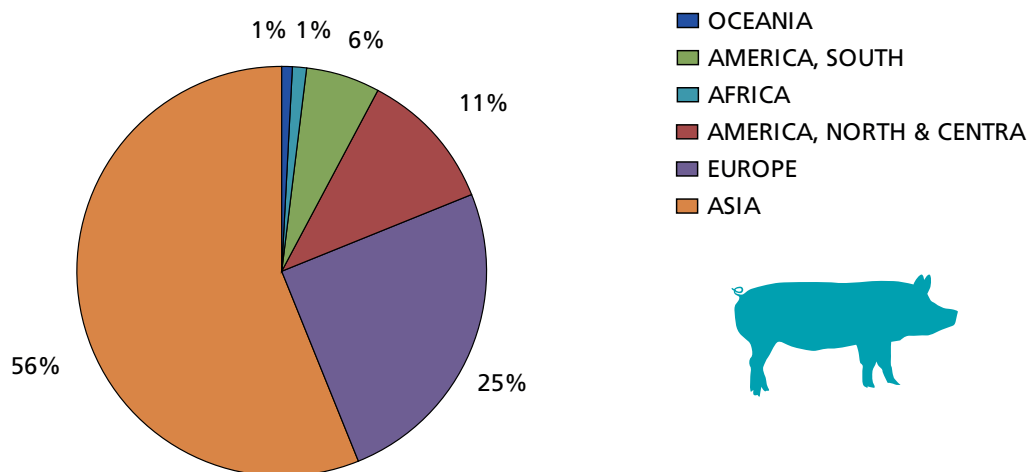
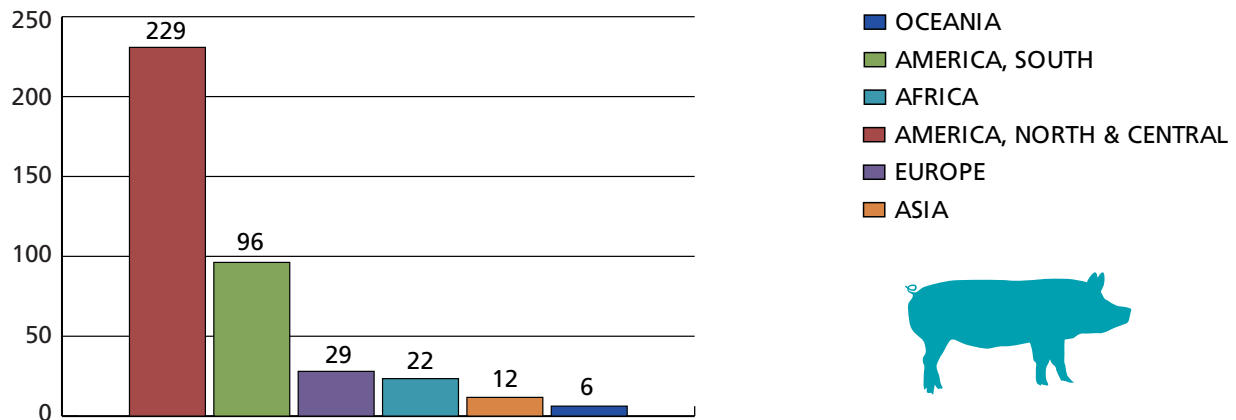


Chart 12. Average number of pigs heads per holding



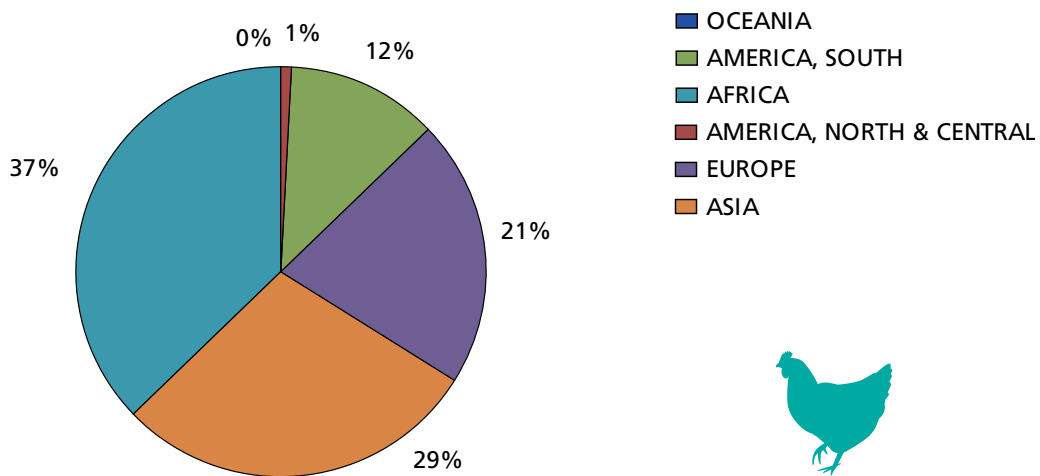
### Horses

4.2.21 Table 8.7 provides data on horses from 74 countries. China with 8 million horses has the largest population. The exact population of horses in Myanmar is not clear as the number includes other big livestock species. Other countries having notably high populations of horses are Brazil, the USA, Columbia, Mongolia, South Africa, and Ethiopia, in decreasing order of number of heads. The holdings having the largest number of heads of horses are found in South Africa.

**Chickens**

4.2.22 Table 8.8 presents data for chickens from 99 countries. It may be noted from the footnotes on the data in the tables, that often data have limitations. For some countries, the population is restricted to only broilers or layers, for others it relates to all types of poultry. The other limitations arise from the fact that some censuses may ignore backyard raising of chickens, and the households with backyard poultry are not enumerated as they do not qualify as agricultural holdings as per the threshold used for the census. Nonetheless, broadly speaking, some conclusions are possible. One third of chickens are raised in North America, of which 90 percent are in the USA, which appears to be, by far, the main raiser (note that no figure is available for China). Brazil, the second country according to number of poultry, represents only 40 percent of the USA, and India, the third, 25 percent of the USA. Chickens are spread all over Europe, but all the European countries together raised only 23 percent of the world poultry, a bit more than Asian countries (not counting China again) and South America.

**Chart 13. Number of holdings with chickens**



**Chart 14. Number of heads of chickens**

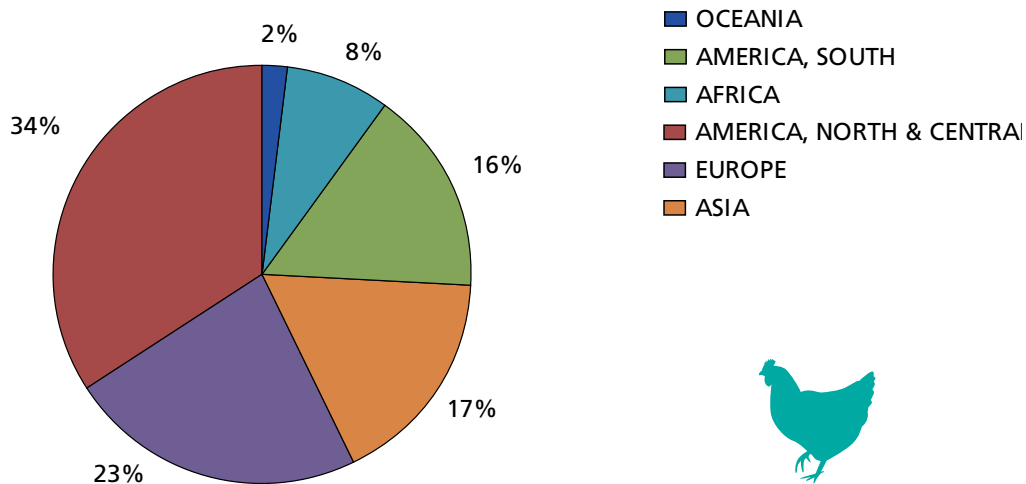
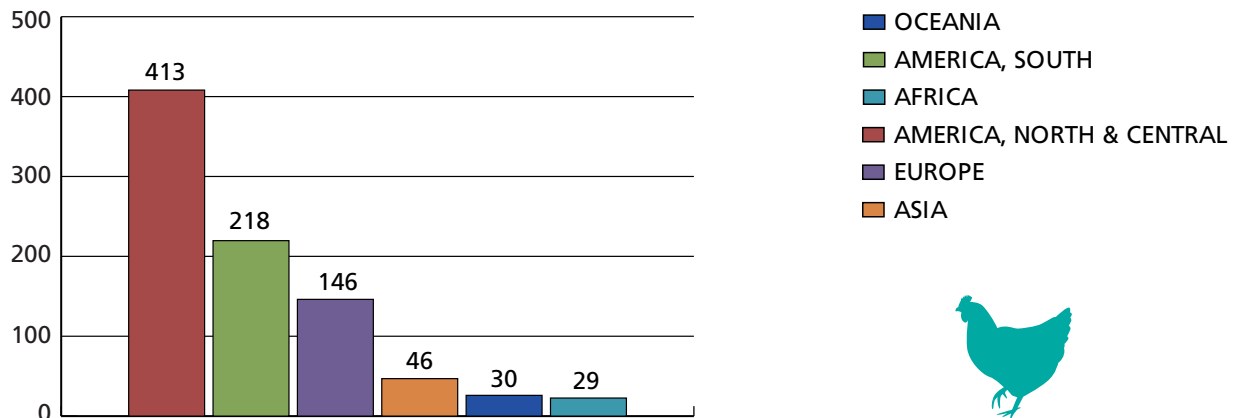


Chart 15. Average number of chickens heads per holding



### Agriculture machinery

**4.2.23** Table 9.1 provides data on tractors from 36 countries, separately for 4 wheel tractors and track laying tractors. Besides the limitations on number of countries collecting data on machinery, often no distinction is made in the capacity of the machinery. From the limited data that are available it is clear that the use of machinery in Europe is much higher than in Asia and Africa. Among the reporting countries, France has the largest number of tractors, but the highest number of tractors per holding are found in Luxemburg and Denmark.

### Irrigation

**4.2.24** An attempt was made to compile data on at least two common indicators of irrigation, viz. number of holdings using irrigation and area irrigated. Table 10.1 presents the results from 15 countries. Among these countries, Egypt leads the list as nearly 77 percent of holdings use irrigation and a similar percentage of the holding area is irrigated. It was surprising to note that only 14.1 percent of holdings in the US reported irrigation and the irrigated area was only 5.9 percent of the holding area.

