
## INTRODUCTION

In this commentary attention is focussed on the economic units of Australian agriculture—their size, relative productivity and type. The statistics from the Australian Bureau of Statistics which are mapped and described are for 'agricultural establishments' (see notes to Table 16 and the legends of the maps). However, the word *farm* is used, for simplicity, although with this more restricted meaning.*

Australian farms are freehold or held as Crown leases issued and administered by State government authorities. In the cropped and more densely settled regions of the south and east, freehold predominates. Elsewhere, throughout the extensively grazed pastoral regions, leasehold predominates and freehold is rare except in the Mitchell grass plains of central Queensland. The terminology and conditions under which leases are issued differ between the States but the most common is termed a pastoral lease, which is usually issued with conditions covering length of tenure, improvements to be made and, in some cases, maximum and minimum stocking rates.

Historically, land settlement policies have aimed at an egalitarian division of land into blocks sufficient for the economic maintenance of a family. In recent years there has been a general trend towards fewer but larger farms as smaller and now less economic farms have been assimilated by more efficient ones, in many cases by the formation of partnerships and by an increase in corporate ownership. Even so, more than 90% of farms are still family enterprises.

Australian farms are highly mechanised and most are operated only by the farmer and his family with a minimum of hired help, often casual labour employed at times of peak farm activity.

Machinery of increasing power and sophistication has entered almost every branch of farming. Larger and more powerful tractors can now perform three tasks faster than earlier tractors could do one. Aircraft spread fertilisers, sow crops and pasture, and carry out pest and weed control. Helicopters are used for mustering cattle in the extensive grazing lands of the centre and north. Specialised fruit picking machinery and sugar cane harvesters have replaced itinerant hand labour. These and many other less spectacular forms of mechanisation have made Australian agriculture one of the most mechanised and labour-saving in the world.

## FARM SIZE AND AGRICULTURAL PRODUCTIVITY

A characteristic feature of Australian farms is their large size. The present average farm area is nearly 3000 ha, very much larger than in Europe and fifteen times the U.S.A. average of 200 ha. This large average area is inflated by a few extremely large pastoral leases of more than 50 000 ha in the interior and north, which make up less than 1% of all farms yet occupy about 60% of the agriculturally used land (Table 15). However, the average area of the remainder is still almost 1000 ha; and about one in four farms is larger than 800 ha compared with about one in twenty in the U.S.A.

Farm size is largely dependent on land productivity which, in Australia, is inherently low due to the combined effects of low and unreliable rain and generally poor soils. Despite great improvements in pasture quality and crop yields, land productivity is still low in comparison with Western Europe and North America. The average livestock carrying capacity is still only about one-fifth of the U.S.A. average, and wheat yields are only about a quarter of those of north-western Europe and about half those of the U.S.A. So, to achieve the same production as its American and European counterparts, an Australian farm has to be considerably larger.

Within Australia there is a close inverse relationship between farm size and land productivity, as shown by a comparison of the maps 'Size of Farms' (overleaf) and 'Value of Agricultural Production'†, both of which are based on statistics for local government areas. The values mapped are based on averaged prices for the three years 1973–74 to 1975–76 applied to the quantities of agricultural produce recorded for 1975–76, with allowance made for crop failure and the like. Hence this map shows *relative productivity*, not gross income for a particular year.

Productivity in areas of livestock grazing is closely related to stocking rate with allowance made for turn-off rate, wool clip or milk yield depending on the type of farm activity. In cropped areas it is related to the type and intensity of cropping and to variations in yield where one crop predominates over broad areas, as in the wheat belts.

The largest farms are in the arid interior and monsoonal north, where beef cattle are grazed on poor, sparse native pastures at very low stocking rates with a low percentage turn-off producing an annual income of only a few cents per hectare. These farms average more than 50 000 ha and some exceed a million hectares. At the other extreme, market gardens in well watered coastal areas producing vegetables worth more than a thousand dollars per hectare may occupy only a few hectares.

Between these two extremes there are general trends coastward and southward of progressively smaller farms occupying increasingly more productive land. Sharper changes occur at the drier edges of the wheat belts, notably in Western Australia and western South Australia, where the combined income from wheat and sheep grazed on improved pastures is much greater per hectare than that derived only from sheep grazed on poor native pastures on adjacent uncropped areas.

In the east and south-east there is generally a more gradual sequence of decreasing farm size, related to increasing productivity, as the effective rainfall increases coastward. Notable disruptions to this general trend are the relatively high productivity and smaller farm sizes of the Mitchell grass plains of central Queensland and the very high productivity and small farms in the south-eastern inland irrigation areas, where intensive cropping and dairying is independent of local rainfall.

Within the wheat belts, productivity is greatest where wheat yields are high and subterranean clover pastures can be easily maintained. These areas most commonly occur towards the wetter edges of the belts in areas of better soils but are not everywhere associated with smaller farm sizes.

Coastward from the wheat belts, agricultural productivity varies greatly from place to place, reflecting the wide variety of topography and soil quality in these upland and coastal regions. Small, intensive crop and dairy farms, usually on fertile valley floors, form areas of very high productivity adjacent to poor hill country occupied by larger beef farms. On the tablelands of New South Wales and in south-western Victoria and south-eastern South Australia, areas of intermediate productivity result from prime lamb and beef production from high-quality sown pastures.

## TYPES OF FARMS

The 'Farm Types' map is based on the Australian Bureau of Statistics' classing of farms ('agricultural establishments') in 1975–76 according to the Australian Standard Industrial Classification (see notes to Table 16). Although there has been significant diversification on farms in the last two decades, almost 75% have only one main purpose and only three dual-purpose categories account for nearly all the remainder. Although over 20 farm types are shown in Table 16, the seven covering livestock grazing and cereal growing include three-quarters of all farms and occupy all but a small fraction of the farmland.

**Table 15. Farm Types classified by Size, Australia 1973–74 (per cent)**

| *Type* | *Size Class* (hectares) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | <10 | 10–50 | 50–200 | 200–800 | 800–3 200 | 3 200–12 500 | 12 500–50 000 | >50 000 |
| *Livestock Farms—* | | | | | | | | |
| Beef cattle | .. | 4 | 31 | 36 | 17 | 7 | 3 | 2 |
| Dairy cattle | 1 | 19 | 62 | 17 | 1 | .. | .. | .. |
| Sheep | .. | 1 | 16 | 45 | 22 | 7 | 6 | 2 |
| Pigs | 19 | 31 | 30 | 17 | 3 | .. | .. | .. |
| Poultry | 59 | 25 | 10 | 5 | 1 | .. | .. | .. |
| *Livestock and Crop Farms—* | | | | | | | | |
| Sheep–cereal grains | .. | .. | 5 | 48 | 41 | 5 | .. | .. |
| *Crop Farms—* | | | | | | | | |
| Cereal grains | .. | 1 | 13 | 50 | 32 | 4 | .. | .. |
| Sugar cane | 1 | 38 | 51 | 10 | 1 | .. | .. | .. |
| Grapes | 30 | 61 | 7 | 2 | .. | .. | .. | .. |
| Fruit | 28 | 51 | 18 | 3 | .. | .. | .. | .. |
| Potatoes | 7 | 34 | 45 | 12 | 1 | .. | .. | .. |
| Other vegetables | 42 | 32 | 18 | 7 | 1 | .. | .. | .. |
| Tobacco | 5 | 43 | 41 | 8 | 3 | .. | .. | .. |
| All Farms | 5 | 13 | 27 | 32 | 16 | 4 | 2 | 1 |
| *% Total Farm Area* | .. | .. | *1* | *5* | *9* | *8* | *15* | *62* |

*Notes:* These percentages were calculated, with some estimation, from the last such statistics prepared by the Bureau of Statistics. The statistics used (for 'commercial holdings') had a different basis to the statistics in Table 16 but nevertheless excluded a broadly comparable number of rural holdings of little or no economic significance (60 000 holdings totalling 12.5 million hectares, leaving 180 000 totalling 488 million hectares).

*Source:* Australian Bureau of Statistics, *Classification of Rural Holdings by Size and Type of Activity: 1973–74.*

*PHOTOGRAPH ABOVE: Farms growing orchard fruit, grapes and rice in the Murrumbidgee Irrigation Area, New South Wales.*

*This photograph and Figures 26, 27 and 29 by Australian Information Service; Figure 28 by F. T. Bullen.*

* In the previous commentaries *farm* refers to the statistical units from which the Bureau collects agricultural information. Beginning in 1975–76 the definition of these units, then still called rural holdings, was revised and their name changed to 'establishments with agricultural activity'. The result was the omission of a large number of hobby farms and the like, mainly due to the introduction of an economic cut-off (see notes to Table 16). These changes do not invalidate the comparisons made so far in this volume with earlier statistics for pasture areas, livestock numbers and crop areas—the holdings excluded in 1975–76 and subsequently do not contribute significantly to overall agricultural activity. However, the statistics given in this commentary for before 1975–76 (Table 15) and the comparisons over time in the text and Table 16 have all been kept broad because of the significant changes in the statistical definition of agricultural establishments that the Bureau has made.

† The meaning of the title of this map is as defined by the headnote and footnotes of its legend; the map is not based on statistics for gross or local values of agricultural commodities (also prepared by the Australian Bureau of Statistics).

**Figure 26.** *The head station of one of the larger pastoral leases, covering more than a million hectares, in the Barkly Tableland, Northern Territory. These are usually run by companies and employ many more people than the average Australian farm.*

## Livestock Farms

### BEEF FARMS

Farms predominantly used to produce beef cattle are now the most numerous type, having doubled since 1965–66 to 34 000 in 1979–80 (Table 16), and occupy half the total farm area. Beef farms occur in all major climatic zones but only predominate in areas environmentally or economically unsuitable for sheep, crops or dairying. They are the only farm type over most of the extensive grazing land of the centre and north.

Because of their broad climatic range, beef farms differ greatly in size (see Table 15) and many other characteristics. They include extremely large, company-run pastoral leases in the arid interior and small, family-run freehold properties in the more humid coastal regions.

In the former the cattle graze extensively over the large expanses of sparse native pastures and are mustered usually only once a year, when new calves are branded and a small proportion of the stock is turned off for slaughter or as store cattle for fattening in areas of better pasture. Mustering teams work from outstations or temporary camps. Helicopters are increasingly used in this type of work. For the rest of the year the cattle roam wild, their movements regulated only by widely separated fences and watering points that are usually bore-fed, since naturally occurring surface water is rare and ephemeral.

On the much smaller beef farms in more humid regions the cattle are grazed on sown or naturalised exotic pastures at higher stocking rates. Many farmers grow small areas of fodder crops to supplement the pasture. The stock are closely managed and fatten rapidly so that annual rates of turn-off for slaughter are high.

Feed-lot fattening of beef cattle is uncommon, in contrast with the U.S.A. It is restricted to areas with abundant local supplies of cheap fodder grain, such as the Darling Downs and Liverpool Plains, and is only profitable when grain prices are low and beef prices high.

### DAIRY FARMS

Once the most numerous of all farm types, dairy farms have halved in number over the last two decades and dairying districts have contracted to areas of optimum productivity in the more humid coastal lowlands, and inland have persisted only where cheap irrigation water is available. High milk production is dependent on year-round growth of high-quality pasture, a condition most often met in the cool, humid, coastal lowlands of Victoria and Tasmania and in the irrigation areas of north-central Victoria.

There used to be a clear distinction between farms producing liquid milk and those producing milk for manufacturing into dairy products, most of which were exported. The former were mainly concentrated close to urban centres—a concentration reinforced by legal zoning of milk 'catchment' areas in each State and a quota system for farms in those areas. The decline in competitiveness of Australian dairy produce on world markets, which began in the 1950s, severely affected the manufacturing sector and caused a restructuring of the whole industry.

Many marginal farms changed to beef cattle, particularly in Queensland and northern New South Wales, or were amalgamated with other dairy farms to form larger and more efficient units. This process was financially assisted by the Commonwealth Government's Marginal Dairy Farm Reconstruction Scheme of 1970.

The liquid milk zoning and quota arrangements are now broader and more flexible, and urban markets are supplied from much wider areas by larger and faster refrigerated tankers. The proportion of farms supplying milk both for liquid consumption and manufacturing has also increased.

**Table 16. Number of Farms by Type, Australia**

| *Type* | *1975–76* | *1979–80* |
|---|---|---|
| *Livestock Farms—* | | |
| Beef cattle | 30 550 | 34 150 |
| Dairy cattle | 26 950 | 20 850 |
| Sheep | 20 150 | 20 200 |
| Sheep–beef cattle | 13 650 | 12 550 |
| Pigs | 3 550 | 3 300 |
| Poultry for meat | 560 | 680 |
| Poultry for eggs | 1 460 | 1 150 |
| *Livestock and Crop Farms—* | | |
| Sheep–cereal grains | 23 000 | 23 350 |
| Beef cattle–cereal grains | 4 850 | 5 250 |
| *Crop Farms—* | | |
| Cereal grains | 18 950 | 19 650 |
| Peanuts | 420 | 460 |
| Other oilseeds | 470 | (*a*) |
| Cotton | 100 | 220 |
| Sugar cane | 6 650 | 6 400 |
| Grapes | 4 750 | 4 900 |
| Tropical (plantation) fruit | 2 050 | 2 150 |
| Orchard and other fruit | 7 250 | 7 250 |
| Potatoes | 2 180 | 1 850 |
| Other vegetables | 5 300 | 5 050 |
| Tobacco | 1 040 | 940 |
| Nurseries | 1 340 | 1 680 |
| *Other—* | | |
| Unspecified single-purpose | 4 650 | 7 000 |
| Multi-purpose | 550 | (*b*) |
| TOTAL FARMS | 180 400 | 179 100 |

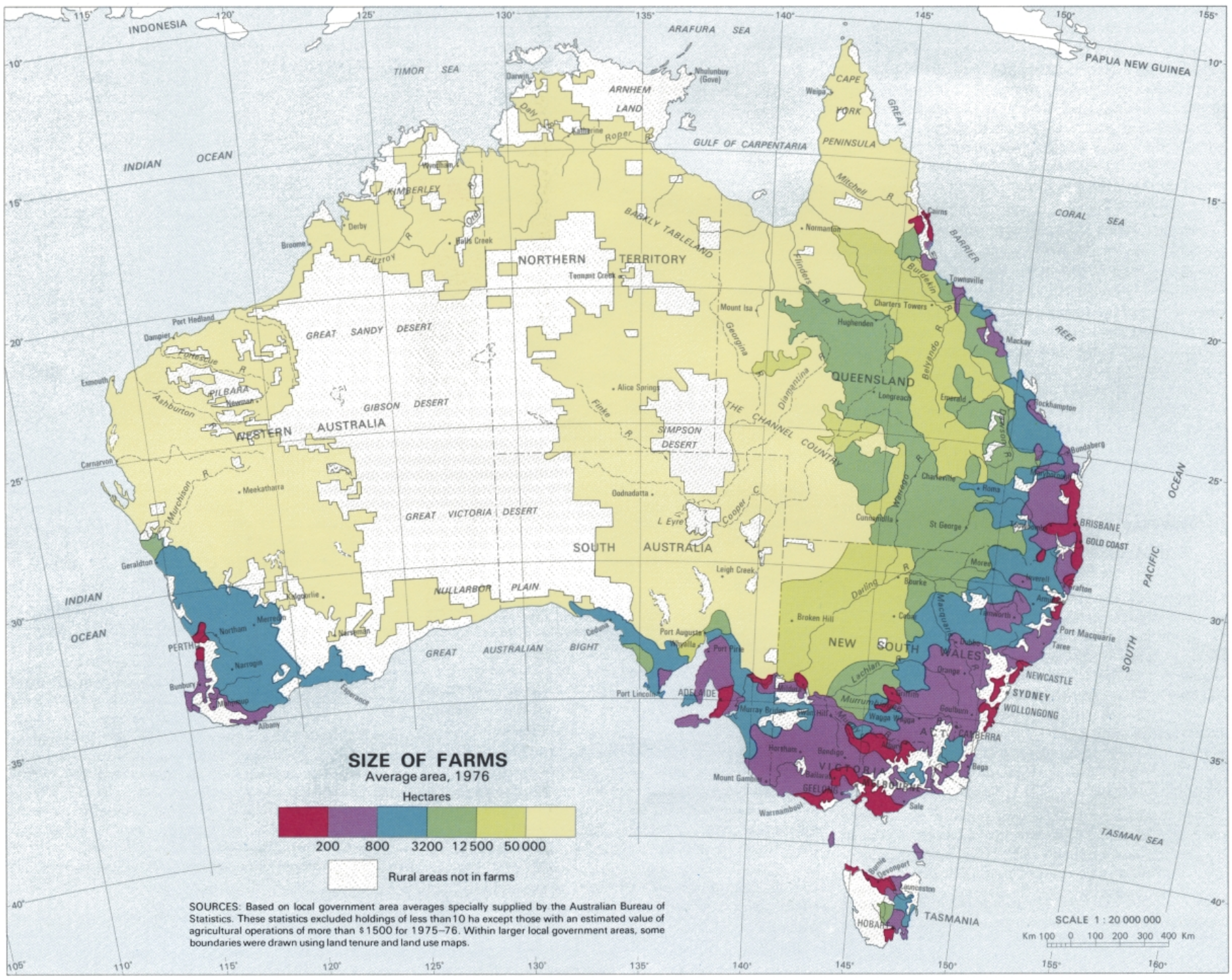
*Notes:* The cut-off for inclusion of agricultural establishments (establishments whose predominant type of activity is agriculture) in these statistics differed between one year and the other—the minimum 'estimated value of agricultural operations' (see legend of the map 'Farm Types') was $1500 in both years but, in 1975–76, holdings of 10 ha or more with a lower value were also included.

Farms were classified as having one main purpose if the value of a single activity was predominant and exceeded 50% of the total for the farm. Farms were classified in one of the three duplex categories only if the combined value of the two activities exceeded 75% of the farm total and neither was more than four times the other. (The legend of 'Farm Types' is misleading on these rules of classification.)

(*a*) Included in the cereal grains category.

(*b*) Multi-purpose farms were not distinguished in 1979–80. Farms which would, in previous years, have been classified in this group were classified according to their predominant activity.

*Sources:* Australian Bureau of Statistics, *Agricultural Sector: Part 1—Structure of Operating Units, 1975–76* and *Agriculture Sector: Australia: Structure of Operating Units 1979–80.*



The contraction of dairying has resulted in fewer but larger farms (the average size is about 150 ha compared with 80 ha in 1965–66) with larger, more productive, herds (now averaging 150 head per farm) grazing mainly on sown pastures. Sales of milk make up about three-quarters of farm income, the remainder coming from sales of veal and beef animals sometimes supplemented by pigs.

### SHEEP FARMS

Once the archetype of Australian agriculture, farms solely or predominantly dependent on sheep have decreased greatly in recent years. Although partly due to the overall trend towards fewer and larger farms, this decrease has mainly resulted from diversification into supplementary activities such as wheat cropping or beef farming.

Sheep farms today predominantly occur in two distinctly different climatic regions on either side of the wheat belts. The larger area of sheep farms is in the southern semi-arid pastoral regions adjacent to the drier inland edges of the wheat belts. Here fine-wool merinos are grazed on native pastures at low stocking rates on large pastoral leases averaging, nationally, about 30 000 ha and running about 6000 sheep. Lease areas differ considerably between States, ranging from 5000–10 000 ha (in parts of New South Wales adjacent to the wheat belt) to 150 000 ha in drier areas of Western Australia.

Sheep farming is also the major activity adjacent to the humid edge of the wheat belts and in the drier parts of south-eastern Tasmania. Here high-quality sown pasture can carry about 4 sheep per hectare so that farms are much smaller than in the drier pastoral zone, averaging about 700 ha. While wool produced from merinos is still important in these more humid areas, fat lambs sired by British-breed rams are, on many farms, the greater income earner.

### SHEEP–BEEF CATTLE FARMS

Discrete areas of sheep–beef farms are largely confined to a discontinuous chain of pastoral leases along the boundary between sheep and cattle country in the dry inland regions of Western Australia and South Australia. A much larger number of farms of this type are scattered within country that until recently had been predominantly sheep farming land in the pastoral zones of Queensland and New South Wales, where many traditional sheep farmers diversified to include beef cattle in the early 1970s. Smaller areas in the Riverina and north-central New South Wales have a longer history of combining the two activities. In the pastoral zone sheep–beef farms average about 20 000 ha and carry about 5000 sheep and 500 cattle grazed almost exclusively on native pasture.

The largest number (about 60%) of sheep–beef farms are in the higher rainfall sheep farming country adjacent to the wetter edges of the wheat belts, particularly in the tablelands of New South Wales. Here beef cattle integrate well with prime lambs since both exploit complementary sections of the meat trade. Farms average about 800 ha with about 2000 sheep and 200 cattle grazed on improved pastures supplemented by small amounts of fodder crops.

### PIG AND POULTRY FARMS

Originally pig raising was an important sideline to dairying, the pigs being fed on the skim milk remaining after the cream was separated on the farms and sent to local butter factories. This changed with the factory processing of whole milk. Today pigs are mostly grain-fed on farms on the wetter edges of the cereal belts where grain is locally plentiful and comparatively cheap. Pig farms are notably concentrated in such areas in south-eastern Queensland, where more fodder grain is produced than elsewhere in Australia. While the majority of pig farms are inland some remain in coastal dairying areas.

The number of pig farms rose during the late 1960s and early 1970s, when cheap over-quota wheat was available for pig feed. However, this cheap source of feed has largely disappeared with the relaxation of wheat quotas and the number of pig farms has recently declined in response to rising production costs.

In specialist piggeries today the animals are kept indoors in carefully regulated environments with closely controlled feed regimes. Most pig farmers, however, have ancillary activities such as dairying, other livestock grazing or cereal cropping.

Poultry farms today are highly specialised indoor operations producing eggs or meat birds, with hatcheries supplying young birds. Careful environmental and genetic control and automated feeding have improved production efficiency, making poultry increasingly more competitive in price compared with other meats. This has led to a marked increase in poultry consumption and to an increase in the number of farms producing poultry for meat. However, the number of egg-producing farms has decreased as small farms have been unable to compete with larger ones in this capital-intensive industry.

Poultry farms have a similar distribution to pig farms, either close to the larger urban markets (particularly egg farms) or close to supplies of cheap grain on the wetter edges of the wheat belts (particularly meat birds).

**Figure 27.** *Broiler chicken houses—a most intensive type of animal farming.*

## Livestock and Crop Farms

### SHEEP–CEREAL GRAINS FARMS

Sheep–cereals farms are the typical and still the most numerous farm type of the wheat belts despite the recent increase in wheat cropping, which has led to a reclassification of some as cereals farms (Table 16).

They are mostly family properties, on average running 2000 sheep on 1200 ha and with 500 ha of sown pasture and 250 ha of wheat. Many now have small cattle herds of 50–100 head. Most farms grow wheat but barley in South Australia, rice in the irrigated areas of southern New South Wales, and sorghum in northern New South Wales and Queensland are locally important. Oilseeds—notably sunflowers—have also entered the rotation, particularly in northern New South Wales and Queensland. Sown pasture is mainly based on subterranean clover, which provides good stock feed while cheaply fixing nitrogen in the soil for the benefit of the ensuing crop.

The sheep are mainly merinos kept for their fine wool but towards the wetter edges of the wheat belts, where pastures are more productive, fat lambs sired by British-breed rams are produced on many farms.

**Figure 28.** *A wheat-sheep farm in central New South Wales. Typically, wheat (shown by the pale yellowish triangle to the left) occupies only about a quarter of the farm area.*

### BEEF–CEREAL GRAINS FARMS

Beef–cereals farms mainly occur in comparatively small areas of Queensland which are climatically suitable for wheat and sorghum but better suited to cattle than sheep. Their recent increase in number has been largely due to brigalow clearance in central Queensland, which has enabled the introduction of cropping in areas previously grazed only by cattle. Isolated concentrations of this farm type also occur in the Northern Tablelands and Riverina of New South Wales, where historical preferences for cattle rather than sheep have been locally maintained.

## Crop Farms

### CEREAL GRAINS FARMS

Cereal farms are largely a variant of the sheep–cereals or beef–cereals types since almost all keep some livestock although grain is their main source of income. They have increased in number since the mid-1960s, when most sheep–cereals farms began to grow more wheat, so many more are now classified as cereal farms.

Even though cereals farms are scattered through much of the wheat belts, particularly in the eastern States, discrete areas of predominance occur only on the drier margins and, at the other extreme, in areas of higher rainfall and soil fertility where wheat yields are high. The largest example of the former occurs on the dry margin of the Western Australian wheat belt. Here subterranean clover pastures are difficult to maintain during the hot, dry summers; sheep stocking rates are accordingly low in comparison with the wetter parts of the wheat belts so that most income comes from wheat, despite its low yield. Examples of the predominance of cereals farms where wheat yields are high occur in the Darling Downs and in northern New South Wales. Here sown pasture is largely replaced in the rotation cycle by fallowing and fodder oats, so livestock are a minor income earner compared with the high-yielding premium quality wheat grown in these areas.

The rice farms of the irrigated areas of the New South Wales Riverina belong to this type but do not form sufficiently large concentrations to be mapped as discrete areas.

### PEANUTS AND OTHER OILSEEDS FARMS

This group consists of two relatively dissimilar types: the specialist producers of intensively grown peanuts and soybeans and those producing less intensively grown sunflowers and safflower.

Peanut farms are largely confined to the Kingaroy district of south-eastern Queensland, in a local concentration that has existed for many years under tariff protection and State-controlled marketing. Soybean farms are scattered within recently irrigated areas of central and northern New South Wales and south and central Queensland.

The main concentration of farms obtaining most of their income from sunflowers and safflower is in the Central Highlands of Queensland. Here the oilseeds are grown in rotation with wheat and sorghum and in conjunction with beef cattle. With all these options open, the number of oilseed farms fluctuates according to the market price of oilseeds relative to these other commodities and with seasonal conditions; indeed, the Bureau of Statistics does not now distinguish them from farms growing cereals for grain.

### COTTON FARMS

Cotton farms are confined almost entirely to irrigated areas of inland northern New South Wales and Queensland, with the greatest concentration along the Namoi River below Narrabri (N.S.W.). The initial impetus to the upsurge in irrigated cotton farming in the mid-1960s was given by large companies, with overseas experience in cotton growing, that were able to afford the high capital costs of gin construction and specialised mechanical pickers as well as the high recurrent costs of aerial spraying against insect pests.

Cotton is virtually the sole enterprise of these company farms, which still form the hub of the industry. However, as local understanding of cotton cultivation has grown, it has been taken up by nearby sheep–cereals or cereals farmers with irrigable land and, for some, cotton has become the major income earner, particularly in northern New South Wales.

### SUGAR CANE FARMS

Sugar cane farms are predominant in tropical and subtropical areas of well watered and fertile soils on the coastal lowlands of Queensland and, to a lesser extent, northern New South Wales. The farms are small, averaging about 120 ha, and at any one time at least a third of the farm is under cane. The continuing productivity of the cane monoculture is maintained by heavy applications of nitrogenous fertilisers and rotation with a leguminous manure crop about once every fourth year. The area of cane grown on each farm is 'assigned' by the local sugar mill to regulate production.

Australia pioneered the mechanisation of cane farming and today almost all cane is mechanically planted and harvested. The crushing mills are located within the cane-growing areas to minimise the distance that the bulky cane has to be transported, often by narrow-gauge tramways.

While cane growing is the sole enterprise of the majority of farms, some also run small cattle herds, mainly for beef.

**Figure 29.** *A sugar cane farm in northern Queensland. The cane is grown on the alluvial flats in the foreground.*

## INTENSIVE CROP FARMS

This grouping consists of a variety of farm types with income derived from a number of intensively grown crops, predominantly fruit or vegetables. They all have in common high gross values of production per hectare with equally high costs of cultivation, pest and weed control, and mechanisation or labour. Most are small farms of less than 100 ha and many are less than 10 ha. Some are larger, notably potato, tobacco and some other vegetable farms, combining intensive cropping with other, more extensive, agricultural activities (Table 15). A problem common to most farms in this group is the high cost of hand labour but much is now done by machines. Considerable advances have been made in mechanisation and in breeding crop varieties more amenable to mechanical harvesting.

Intensive crop farms in coastal areas are mainly market gardens and small fruit farms growing fresh produce for nearby major urban centres. In coastal areas further away from the major cities, intensive farming occurs in small pockets of land well suited to a particular enterprise. Thus potatoes and other vegetables preferring a moist temperate climate are grown in areas of good soils in coastal Victoria and northern Tasmania; and tropical fruit such as bananas and pineapples and early vegetables are farmed in the coastal areas of Queensland and northern New South Wales, and at Carnarvon in Western Australia.

Intensively cropped farms in upland areas mainly produce temperate fruit (principally apples, cherries and plums) and, to a lesser extent, vegetables (particularly potatoes in the Central Highlands of Victoria and the Southern Tablelands of New South Wales). Vineyards producing high-quality wine grapes and tobacco farms are located on upland fringes; the main producing areas have been described in the 'Crops' commentary.

Intensive crop farms in the inland irrigation areas mainly produce fruit (particularly oranges, peaches, pears and grapes) and, to a lesser extent, vegetables for processing.

Most intensive crop farms have decreased in number over the last two decades—only vineyards have significantly increased, due to increasing domestic wine consumption. Orchards have declined due to the sharp fall in most fruit exports. The common trend towards fewer but larger farms is only evident amongst this group in vegetable farms which, since 1965–66, have declined in number although the average size has more than doubled. This has been due to the loss of many small market gardens to urban expansion and an increase in much larger vegetable farms in inland irrigation areas.

## FURTHER READING


Australian Bureau of Statistics, current and past year-books for Australia and individual States.

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——*Quarterly Review of the Rural Economy*; periodic general reviews of major industries (sheep, beef cattle, wheat etc.); various more specific national or regional studies.

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Maps on agriculture in the earlier series of the *Atlas of Australian Resources*:

| | |
|---|---|
| First Series | Distribution of Stock (a single map showing livestock numbers averaged for 1951–53 and pasture types) |
| | Croplands (four maps based on averaged statistics mainly for 1953–54 to 1955–56, two on wheat area and yield and two on areas of other crops) |
| | Agricultural Production (a single map based on averaged statistics for 1945–46 to 1950–51 showing percentage area under crop and estimated annual gross value of specific crops) |
| Second Series | Grasslands (four maps showing: native pastures; introduced pasture zones; and area for 1968–69 of sown pastures and of pastures fertilised) |
| | Livestock (a single map showing livestock numbers averaged for 1965–67 and livestock density by local government areas) |
| | Sheep and Wool (several maps showing sheep numbers 1965, annual wool clip per animal shorn averaged for 1963–64 and 1964–65, etc.) |
| | Croplands 2nd edn (four maps based on area statistics for 1967–68 showing percentage area cropped, wheat for grain, and other crops) |
| | Crop Production (two maps showing estimated annual gross value of specific crops averaged for 1963–64 and 1964–65, and storage facilities and exports) |


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**MAPS FOLLOWING**

***Farm Types***

***Value of Agricultural Production***