

1957

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Recommended Citation

Belthuis, L. (1957). A Typical "Large Area" Farm in the Murrumbidgee Irrigation Area, N.S.W., Australia. *Journal of the Minnesota Academy of Science*, Vol. 25 No. 1, 385-388.
Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol25/iss1/51>

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A Typical "Large Area" Farm in the Murrumbidgee Irrigation Area, N.S.W., Australia

INTRODUCTION

The Murrumbidgee Irrigation Area of New South Wales, Australia, is part of a low flat plain sloping northwestward from the river of the same name which rises in the Eastern Uplands north of Mt. Kosciusko. It is 350 to 400 miles southwest of Sydney. Burrinjuck Dam, the major storage on the Murrumbidgee impounds the water for irrigation and is located in the uplands of the western slope north of Canberra. Water is carried in the stream bed 240 miles before it is diverted at Berembed Weir into a channel dug almost 100 miles in a northwesterly direction for irrigation purposes.

Soils of the district are of several types. Alluvial ones are most widespread and a clayey subsoil of varying degrees is present in all. The climate is semiarid with a rainfall average of about 15 inches.

A century ago this land was first used for grazing with some wheat growing. Subdivision for irrigation did not take place until immediately after World War I.

The plan for irrigated land use includes two types of farms. The horticultural farm which is 20 to 40 acres in size used mainly for fruit and the "large area" farm of 500 to 600 acres. It is with the latter that this paper is concerned.

THE FARLEY FARM

While several of the large farms were visited, a typical one, the Farley farm, studied in detail is used as an example. This was designated a dairy farm of 114 acres in 1920. When it became obvious that farms for this purpose must be much larger, regulations were passed to allow additions. This farm was enlarged to 513 acres, its present

size. Since the inception of irrigation the land use has changed somewhat. Dairying was not successful as a source of income. After the farm enlargement grazing of sheep became the dominant activity. Rice has been grown since 1926 in rotation with pasture and wheat.

The farm is now divided into 6 fields or paddocks as they are called in Australia. It is worked on a six year plan, one part each year being in rice. This crop varies with the size of the paddock and covers 60 to 100 acres a year. The remaining 5 paddocks are in pasture. Immediately after the rice is harvested the stubble is rolled and planted with oats as a nurse crop to subterranean clover and Wimmera rye grass. After the first year the oats goes out and the others remain with natural grasses and trefoil clover coming in. These five pastures each a different year in growth are retained for five years after which the land is again planted to rice. The whole farm with the exception of the farmsteads and a small woodlot is used in this six year rotation.

The rice and pasturage arrangement is particularly good because once established there are small demands for fertilizer. Superphosphate is used on the pastures but favorable grazing plots are possible with small amounts or no fertilizer in some cases.

While all "large area" farms have some form of rotation including rice and irrigated pastures, not all have as balanced a plan as the Farley farm. Some include wheat in the group, others have a shorter rotation, and still others do not include all land on a farm in a regular rotation plan. Some still burn paddocks in hopes of getting better and earlier grasses the following season.

Rice: Rice in Australia is grown by mechanized agriculture as in the United States. Most of the nation's crop is produced in the Murrumbidgee Irrigation Area. It is planted by seed drills and is harvested by track cutter-combine machines, which cut and thresh the outer edge of each bay, and by engine powered horse drawn combines which handle the remainder of the bay. Practically all rice grown on the M.I.A. is Calora which originally came from California. All rice is sold to the Rice Marketing Board which provides the farmers with seed. Any rice not used in this way goes to one of the mills in the area.

Rice requires more water than does pasture and has more problems but the return per acre is also greater. The average amount of water used on rice on this farm is 4.9 acre feet. Some seasons may require 6 to 7 feet.

Pasture and Sheep: The five pastures are used primarily for grazing sheep. About 800 to 1000 ewes are run each year from which about 800 lambs are expected. This amounts on a yearly average to a carrying capacity of about 2½ sheep per acre.

Dorset Horn and Corriedale-Merino cross sheep were pastured at the time of farm enlargement and have remained the dominant type grazed to the present. The combination of Corriedale-Merino cross ewes with the Dorset Horn rams yields a lamb that will reach fat lamb weight of 36 to 40 lbs. in 10 to 12 weeks. All lambs are sold as suckers if possible. Those left are shorn and sold in the autumn. The farm sometimes buys sheep for trading. These are kept from March to December as a minimum length of time, and then sold when they are attractive in appearance. They may or may not be shorn at the time of sale.

A small portion of pasture or pasture with oats is cut for fodder or seed. On the paddock growing oats as a nurse crop following rice a few heavy patches are cut for seed. Usually about 5 acres of land sown to oaten hay is chaffed, and fed from hopper feeders to lambs which grow better if they have dry feed with the green. One irrigation bay of about fourteen acres of clover pasture is used each year for hay. This produces 20 to 30 tons of bales.

In most years 2½ to 7 inches of water are used for pastures but during some an acre foot may be applied.

Costs: Other than labor which is supplied by the tenant farmer, the costs of operating this farm include water, an expensive item. The farm has a 100 acre foot water right. This amount is obtained at \$.56 an acre foot. Any additional water in 1952 was at the rate of \$2.36 an acre foot. About 400 acre feet of water are used annually for rice and about 350 feet for watering pastures.

Income: Rice provides the largest single source of income on the farm. The average annual yield for the last six years has been 2.75

tons an acre or an annual total of about 200 tons. Prices since 1948 have varied from \$62.90 to \$90 a ton.

Another important source of income is the 8000 lbs. or more of wool from 900 to 1000 ewes which yield a fleece of from 9 to 11 lbs. Average seasonal price of wool over the last several years have varied from \$.20 to \$1.40 a lb. The Australian average for 1955-56 was \$.58.

The sale of fat lambs provides further income. They have in recent seasons brought a return of \$6.50 to \$9 each; in 1955-56 the average received from the farm was \$11.25. When animals are brought for trading there is an additional income from wool and the animal or from the sale of the animal alone.

In normal years about 60 percent of the total income is from rice and the remainder from the sale of wool and fat lambs.

CONCLUSION

This farm has worked out a system whereby the soil is kept in good condition, problems of salting and waterlogging are at a minimum, and at the same time a good income, with present favorable prices is obtained from the land. The system could no doubt be carried on indefinitely without damaging the soil or decreasing the yields appreciably.

What the future holds for this individual farm and others like it cannot be predicted with any degree of accuracy. In time to come this whole area will be more closely settled which will also mean some change in land use.