OBSERVATIONS ON THE DEVELOPMENT OF PRIVATE SHEEP FARMS IN NORTHLAND

2. The Adviser's Viewpoint

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THE NORTHLAND FLOCK

THE Northland flock is increasing rapidly. The sheep population reflects the progress made in pasture development over the past fourteen years, the two million sheep wintered this year representing a remarkable 200% increase in numbers since 1953. It is the initiative of progressive farmers in pioneering improved management techniques, and the courage of the Lands and Survey Department in implementing these methods on a large scale, and with such convincing success, that have shown the way. But it is only during the last three favourable growth years that the extension message of more fertilizer and lime, and, above all, more stock, has been widely accepted. Fertilizer sales have doubled over this three-year period, and sheep owners (of which there are 1,000 with 500 or more sheep), reached a climax this year when they increased their flocks by three times the national average.

Northland, with only 3.5% of the national flock, is not a recognized sheep farming region-yet, but as one local farmer, on typical hill country, has reached 8 ewe equivalents and 90 lb of wool to the acre, the potential for increasing sheep farm production clearly exists. Many acres of partially-developed land are characteristic of the region, and the sheep are of only average quality and performance, as can be expected where rapid increases are taking place. But the sheep owners are a remarkably progressive, pioneering type, and, given favourable market prices, 9 ewe equivalents per acre is a technically feasible target for Northland grassland.

Market prices are the limiting factor, for this is a district where practically every sheep farm is both developing and breeding, and where a high proportion of owners are

heavily-committed new settlers. The current reductions in produce prices, for wool in particular, are of particular significance in Northland, where less than a quarter (423) of the sheep owners have 1,500 or more sheep, and where most are struggling to establish an economic holding. There is no margin for error.

A STUDY IN SHEEP FARM DEVELOPMENT

It is proposed to review D. K. McKenzie's paper to highlight the principles involved in private sheep farm development. Three main factors contributed to Mr McKenzie's success -fitness, both physically and in his approach to planning, buoyant market prices, and recognition at an early stage that he had to borrow to develop from a small acreage of grass. Health and skill, reasonable returns for produce and sound finance are essential to any farm improvement programme.

In 1955, Mr McKenzie purchased 368 acres, of which only 120 acres were in scattered grass. Total investment in land and buildings was $8,000, financed by his own savings of $2,000, and $6,000 as an interest-free loan from his father. For the purposes of this study, however, the full figure may be regarded as Mr McKenzie's contribution, as, with no interest payable, and subsequent gifting, the father's loan was virtually a gift from the start.

The first four years were a struggle, but by concentration on improvement of the existing grass, progress was made. The wool clip rose from 5,000 to 7,000 lb on this grass, the stock increased from 350 ewes and 60 cattle originally owned by the stock firm, to 500 ewes and 67 run cows, both with replacements and all paid for. Even at this low stocking level, some $4,000 had been set aside from revenue and invested in two small hay barns, tracks and drains, two miles of fencing and the first major undertaking, an airstrip.

The outcome of these first four years was therefore a 100% increase in equity from $8,000 to $17,000 and to a virtually debt-free property. But, despite a low $320 annual interest and rental commitment, further development from a gross farm income of $4,600 could only be slow. This increase from 600 to 1,000 ewe equivalents was about the limit with the existing acreage of improved pasture.

1959 then, saw a major decision, when a $4,000 Marginal Land Board loan was to give that vital impetus needed to

raise production on the property, as quickly as possible, to an economic level — to a stage where income would "run the farm", meet the charges on borrowed money, and permit capital repayments and further development from revenue. The borrowed $4,000 went into a ton of lime and two 4-cwt annual dressings of capital fertilizer on the original 120 acres of grass, and, over the same two-year period, the loan enabled a further 40 acres to be cleared, cultivated, and grassed.

The "bread and butter" revenue, that was coming from the property before finance was borrowed for development, was an extremely important factor, for with a stepping-up of farm inputs, a time lag followed; the characteristic pattern was of insignificant initial production increases that gradually gathered impetus. The wool clip is a remarkably simple and accurate barometer of development progress, as the study farm shows. The total clip showed a steady, but increasing yield, from 7,000 lb to 7,500 lb, and then to 8,500 lb in 1961. This last clip was helped by 100 ewe hoggets, bought in the previous year. With an 85% lamb survival, the ewe flock can increase by only 7½% annually, and, as carrying capacity following heavy topdressing can be expected to outstrip the flock's breeding ability, a realistic allowance for the purchase of capital stock must be made from the start.

Three years later, in 1961, the gross farm income had doubled to $8,000. But even 1,400 well-managed ewe equivalents, with a low death rate, and with promising calving and lambing percentages (in the mid-nineties), were no security against market fluctuations, and Mr McKenzie decided to undertake further development to strengthen his position. The 150 acres of improved pasture, and 130 acres recently oversown and topdressed for the first time were not enough; the total area of 360 acres was required to make the property economic and to take full advantage of the improvements, such as the 110 chains of mostly new fencing that had been erected.

Early in 1962, therefore, when it was realized that the enterprise was not yet big enough to generate sufficient capital to develop the remaining area, a further $1,000 was borrowed from the Marginal Lands Board, for capital fertilizer and seed on the 80 acres remaining in fern. This time, however, cultivation gave way to burning, a change that. was to prove beneficial. It is of interest to note that, from then onwards, with the whole farm in grass, 3 cwt of maintenance fertilizer per acre annually was met from

farm revenue. This quantity of just over 3 cwt superphosphate per acre of improved grass had been a feature of Mr McKenzie's management policy throughout, and this pattern of strict adherence to maintenance fertilizer and lime has been a practice associated with successful sheep farm development throughout the north.

Experience has shown that expenditure on maintenance fertilizer and lime spread on the ground should not fall below 25% of the total farm cash running expenses — and, on the other hand, it should not rise above 50% even with the most rapid development. Topdressingrecommendations are given later, but as a simple guide to the fertilizer requirements of sheep farms on this high rainfall country, ⅔ cwt per ewe equivalent for maintenance, and double this rate, up to 1⅓ cwt when developing, are standard recommendations.

With the final 80 acres into production, the wool barometer registered a sharp 2,000 lb rise to over 10,500 lb in 1962, and the bulldozer returned to put in five more dams, and 40 chains of tracks to help cope with the increasing stock.

In 1963, the wool yield passed 11,000 lb, 30 lb per acre for every acre on the farm for the first time. With 900 ewes and 68 run cows, both with replacements, there was a cash surplus even after applying 55 tons of molybdate superphosphate, and subdividing the latest 80 acres into four paddocks. The long postponed amenities began to appear — 400 sq. ft on the house, the second-hand Landrover, and two smail hay barns which went up to hold the 500 bales that were bought.

Then came 1964 and the "wool bonanza" when everything came right — 50c for wool coincided with a spectacular jump of 2,700 lb in the wool clip (an increase of more than 7 lb per acre) as the development country matured, and 100% lambing for the first time along with the 13,730 lb of wool. Over a period of five years, $7,400 had been borrowed from the Marginal Lands Board, and now, with 950 ewes and 80 run cows, both with replacements, the gross income was $12,000. A new wool shed and yards, 230 tons of lime in addition to the 55 tons of fertilizer, could all come from revenue. The Landrover was paid off, and $2,000 went into the wool retention fund. This was truly a year to remember, for, with the property now valued at $36,000, total commitments were only $12,000, leaving a desirable two-thirds equity. At last the farm was a sound economic proposition, with 1,700 well-fed ewe equivalents and a stocking rate of

just under 5 ewe equivalents to the acre. Income could now meet farm running expenses, allow a comfortable standard of living, and still provide sufficient surplus to realize the demonstrated potential of 8 ewe equivalents and 90 lb of wool to the acre.

The decision to realize the remaining potential was no longer required to be based on economic grounds ; it was now a personal matter.

As Mr McKenzie explains in his paper, he took the opportunity at this stage to purchase a neighbouring property and to continue expansion. This has proved a sound decision. He quickly mastered the "burn and blitz treatment" as the best allocation of capital for development of hill country pastures, and he now has sufficient land to buffer price falls, and to provide an outlet for tax-free development. But faced with today's prices of $60 to $70 per acre, the development and fencing of new hill country will have to give way to improvements capable of quick returns. Top priority must therefore go to realizing the production that follows a build-up of breeding stock on generously topdressed improved pastures.

A GUIDE TO THE DEVELOPMENT OF PRIVATE SHEEP FARMS

These, then, are the lessons that may be learned from the experiences of the private sheep farm developers. The principles evolved could well be heeded by any prospective sheep farm developer. In Northland, where fewer than a quarter of the sheep farms are sound economic propositions on present prices, the recommendations are of particular significance.

(1) FINANCE

Adequate and sound finance is essential. A prospective purchaser with less than $20,000 cash in his pocket has no future in sheep farm development. A prospective borrower, considering investment in development, must have sufficient equity to cover his farm running and his living expenses until production responds. On present prices, 1,000 uncommitted ewe equivalents on a freehold property would be the minimum equity requirement to allow development borrowing. An essential requirement, then, is a base of established pasture to work from.

Sound finance is always available for the sound proposition.

(2) DEVELOPMENT AIM

The aim of development must be clearly understood. In most circumstances, development involves borrowing capital to invest in the farm, the aim being to increase the production of the enterprise as quickly as possible, to a level where farm income will provide a comfortable living, service and repay debts, and still leave a surplus for further development. Once this economic level is reached, future development depends on personal attitudes, and comes under the influence of tax concessions and other incentives that complicate evaluation.

Successful development is planned to pay.

(3) ECONOMIC POTENTIAL

An economic potential must be available. Mr McKenzie was in a sound economic position when he reached a desirable two-thirds equity, running 1,700 ewe equivalents on 360 acres, but only at the buoyant prices ruling then. On today's prices, with a similar 5 ewe equivalents carried, 500 acres would be the minimum required: 2,500 ewe equivalents to service a more likely commitment of $30,000, leaving an equity similar to Mr McKenzie's, but now representing one half the estimated value as a going concern. Three variables decide the economic potential — ruling prices, level of production and overheads, The best investment will be the property that can reach an economic level with adequate potential still in hand.

Small holdings with high overheads are vulnerable to market prices.

(4) ALLOCATION OF PRIORITIES

Informed allocation of priorities will ensure the quickest returns on the invested capital. Everything possible should be derived from established pasture before raw country is tackled. Rate of progress depends on ability to balance the three major development inputs, fertilizer, fencing, and stock increases. Technical advice is readily available but can be applied only with an understanding of the following principles.

Fertilizer

The minimum, annual maintenance fertilizer requirement on sheep farms is ⅔ cwt superphosphate per ewe equivalent, over the best grass, or an outlay of $1 per ewe equivalent.

The maximum fertilizer application recommended with development is double the maintenance requirement, i.e., **1** ⅓ cwt, costing $2 a ewe equivalent. (This could not be financed from revenue at present.)

The rate most commonly used is ¾ to **1** cwt per ewe equivalent which enables balanced stock increases to come from the breeding stock on the farm. (For example, 1,200 ewe equivalents, maintained by ⅔ cwt, would represent 40 tons total. A stepping up to ¾ cwt would mean 45 tons. The 5 extra tons would require an additional 66 ewe equivalents to be carried, and these could be bred from the 850 ewe, 85% lamb survival flock of this example.)

Higher rates can be calculated on the basis of size of flock and expected performance, but from **1** cwt per ewe equivalent upwards, buying-in is required for full utilization

Every ⅔ cwt of fertilizer in excess of the maintenance requirement must be utilized by an additional ewe equivalent in breeding stock, $1 extra for fertilizer must be matched by $7 on sheep, or $14 if cattle are used.

Fences

A minimum of 20 paddocks, with no one paddock greater than 10% of the total farm area, is a good rule of thumb. Adequate subdivision should make concentrations of 100 ewes per acre possible with mob grazing, and 200 to 250 ewes per paddock with set-stocking. Siting of fences requires common sense, but building of fences, with 2 chains for every new acre developed, requires $10 per chain for materials alone, when the standard 7-wire fence is used.

stock

The maximum number of breeding stock is essential to any development programme. This policy means fewer mouths to winter, maximum mouths to control summer weed regeneration, and stocking increases available from known stock.

Both cattle and sheep have a place, but sheep must take priority, as even on today's prices the ewe flock, breeding replacements, returns a higher margin than the breeding cow.

Cattle should always be considered as a ratio to acreage of grass. In Northland, this varies from one beast wintered to every 3 acres, in the high rainfall central areas, reducing to one, to 4 to 5 acres on the drier coast. Once the total

cattle numbers are tied to grazable acreage, any variations in cattle policy, and cattle-sheep ratios, are simply an indication of the stage of development that the property has reached. Increases in carrying capacity will then be taken up by a steady widening in the sheep-cattle ratio, and this in turn will ensure the maximum possible financial return per acre.

Stock performance is the best guide to management adjustments. In self-replacing flocks, the total annual clip should not fall below 15 lb per working, breeding ewe put to the ram, and once the wool clip reaches 40 lb to the acre, pastures can be used more economically to finish rather than breed cattle.

With fertilizer, fencing, and stocking in balance, other improvements follow in logical order.

(5) CONSOLIDATION

Any fast developer will reach a stage where a clean-up is necessary. Short-term debt tends to build up. Heavier flock culling becomes imperative.

The successful sheep farm developers have their principles sorted out from the start. They know where they are going, and follow a definite plan to achieve their goal. Land development has no place for amateurs, nor is there any substitute for sound finance and experience.

DISCUSSION

What year was the wool retention money put in, and when can it be used?

1964. The money was used the following year for development.

COMMENT (D. K. MCKENZIE) : The money was left in exactly one year and one day, the minimum time required. The $2,000 was spent on extra stock for the additional land purchased.

Mr. Currie mentioned that in self-replacing flocks, the total annual clip should not fall below 15 lb of wool per working, breeding ewe. Would he **enlarge** on this?

This figure is arrived at by dividing the total annual wool clip by the breeding ewes carried the previous winter. On store sheep breeding properties, 15 lb has been found to be a practical quick guide to well-managed developing propositions. Variations from the 15 lb can give a lead to probable over- or under-stocking with sheep.

Does Mr **Currie** *agree with Mr McKenzie's decision not to put on fertilizer this year? Has he any option?*

I would not support a stop-go topdressing policy on a developing farm. However, I think Mr McKenzie's policy has been misunderstood in that he referred to one well-established part of the farm.

COMMENT (MR MCKENZIE): I have not topdressed the original 360 acres, but I have put 60 tons on the new areas. I am interested to see if production will fall on the improved pasture area. If it does not, I will consider topdressing every other year to give a 1 cwt annual maintenance dressing.

What is Mr Currie's advice to sheep farmers in view of the present market situation?

This is a very wide field, but the overall guide should be the discrepancy between the 100% increase in fertilizer used in Northland over the past three years compared with 25% increase in sheep and 10% increase in cattle over the same period. Basically more stock are required. This applies generally to improved properties, but on developing, heavily-committed farms, one cannot generalize, and a balanced programme must be worked out with the appropriate adviser. Development once started must be carried through, with investment in stock taking priority wherever possible.