PROPERTY DEVELOPMENT IN NEW ENGLAND

A Study of Some of the Problems and Investment Potential in the Armidale Pastures Protection Board District

E. J. WARING* and JUDITH JACKSON†

1. SUMMARY

This paper attempts to generalize the results, on both the local and the national level, of graziers on 1.7m. acres of New England following planned investment patterns developed from farm surveys.[1] This area, at present unimproved, is assumed capable of establishment under improved pastures over a period of ten years.

If all the investment capital required over and above the additional revenue generated by the improvement (assuming no change from present prices) were supplied as loans to landholders, the advances required would range at their maximum between £8 and £10 per acre, or £13m. to £17m. in aggregate, according to the pattern of improvement adopted.

Under these conditions farmers would receive approximately 10 per cent return on investment, but if debts were to be amortized as soon as possible, disposable net revenue would not increase until about the eighteenth year. Many may consider that such a result provides insufficient inducement to invest, but in the long run unimproved properties are expected to fare worst in any continued cost-price squeeze.

Net export earnings from such a scheme would be £50m. to £80m. over the twenty years considered, while turnover on the farms considered would increase by some £100m. Investment in such development could provide superior benefits to other national schemes, and such "peripheral development may avoid the need for some shifts of population while making greater use of existing communications and utilities.

* Senior Lecturer in Farm Management, University of New England.

† Economics Research Officer, N.S.W. Department of Agriculture.

[1] Grateful acknowledgment is due to Mr. R. A. Pearse, of the Faculty of Agricultural Economics, the University of New England, who made available results of current research using "dynamic" linear programming techniques to establish development patterns for pasture improvement on New England grazing properties. The inferences drawn from these results are those of the authors, and do not necessarily represent the opinions of Mr. Pearse.

Accordingly, a further liberalization of term loans,[2] and possibly of taxation provisions on increased livestock inventories following development, and even propaganda to persuade New England farmers to make long term investments in pasture improvement might be justified on several counts.

2. INTRODUCTION

The New England region enjoys a reputation for "safety" which past stocking records support. Crew[3] has shown that for more than forty years the sheep population has rarely fallen more than 10 per cent below trend expectations. As a general rule, sheep population is lowest in reportedly "favourable seasons"; under such conditions cattle population rises, so that the total livestock population in sheep equivalents shows little of the fluctuations typical of most other regions in Australia.

Experience with pasture improvement, especially since the termination of World War II, has shown that both the level and stability of output of sheep products in the region can be increased by use of superphosphate and the introduction of appropriate pasture plants. Many New England graziers have been quick to exploit these possibilities, especially with the development of techniques for aerial topdressing and seeding. Some indication of the rate of acceptance of these techniques is given by a sevenfold increase in the last ten years (to 20,000 tons per annum) of superphosphate supplied by the Armidale and Uralla agencies.

Spectacular as this increase in pasture improvement has been, considerable areas of land suitable for improvement remain to be treated. Crew estimated that 25 per cent of the whole tableland was improved, a figure confirmed by the results of a survey of the Armidale Pastures Protection Board District by James[4] who found that 28.9 per cent of land suitable for development on 50 sample properties had been improved at the time of his survey. James assessed the average return to total capital employed on unimproved properties in his survey group at 1.1 per cent, in contrast to returns of 2.8 per cent to 4.3 per cent on properties with some pasture improvement. Green and Pearse[5] using hypothetical budgets, for 37 tableland properties suggested that marginal return to capital invested in pasture improvement on the northern Tablelands should be of the order of 18 per cent to 20 per cent, while one case study by Waring and Muir[6] showed returns of approximately 100 per cent to new capital invested in aerial improvement on an Armidale district property.

---

[2] In contrast to overdrafts, term loans are usually made for fixed periods (generally ranging from three to eight years, or a little longer) and are amortized by regular instalments which are designed as far as possible to suit the needs of the borrower. In the case of farm development loans there may be a repayment "holiday" in the early stages of the loan but interest, which is at normal bank rates, is payable from the outset.

[3] These observations are based on statistics extracted by N. D. Crew, *The Rural Development of New England*, Armidale: The University of New England, 1960 (mimeo).

[4] B. J. F. James, "Report on an Economic Survey of New England Grazing Properties", this *Review*, Vol. 29, No. 4 (December, 1961).

[5] F. H. Gruen and R. A. Pearse, "Aerial Pasture Improvement in N.S.W.", this *Review*, Vol. 26, No. 2 (June, 1958).

[6] E. J. Waring and D. A. Muir, "Two Case Studies of Pasture Improvement in a Cost Price Squeeze", this *Review*, Vol. 30, No. 1 (March, 1960).

Where returns of these magnitudes have been achieved in practice and can therefore be expected, the large area unimproved is remarkable. James[7] notes from his survey the association between size of property (and hence income level) and the proportion of the property improved. From discussion with property owners it is evident that owners of large properties had a strong incentive to invest in pasture improvement after the wool boom of the early fifties, to take advantage of taxation concessions and they have since been able to carry on this work. However, owners of small properties, although aware of production possibilities, have not attempted pasture improvement, or have been delayed or stalled in a programme once commenced because of internal and external capital rationing.

Attention has been drawn in the past by various people[8] to the long period of time which elapses before returns exceed costs in many programmes for property development by way of pasture improvement. Where development is financed by borrowing on overdraft, debt levels may be expected to rise until the seventh or eighth year, and the business may be in debt for at least twelve years. Until comparatively recently loans for such periods were not readily negotiated and even the operations of the Commonwealth Development Bank, and the more recent provision of term loans by the trading banks, are not sufficiently adequate to meet the needs of all potential borrowers.

One notable aspect of this type of property development is the creation of a need to purchase sheep before full income benefits of pasture improvement can be realized. Purchases of sheep, as a capital expenditure, do not attract concessional allowances for taxation purposes. Thus many graziers undertaking pasture improvement have found themselves faced with a rising taxable income, and the need to make substantial provisional income tax payments, while their need for capital expenditure to permit maturation of their investments is still steeply rising.

A further difficulty is caused by the rapid increase in stock numbers necessary to gain maximum benefit from the programme. Historically approximately 300,000 purchased sheep are brought into New England each year, and it may be difficult to locate additional sheep in sufficient numbers for rapid development. No flock can reproduce quickly enough

---

[7] *Op. cit.*

[8] For example—

F. H. Gruen, "Financial Aspects of Pasture Improvement on South-western Wheat-Sheep Farm", this *Review*, Vol. 24, No. 4 (December, 1956).

Gruen and Pearse, *op. cit.*

R. A. Pearse, "The Development of Optiman Plans for Pasture Improvement Using Linear Programming"—Paper read at Section K. ANZAAS. 1962.

J. N. Lewis, "Agricultural Adjustment in a Changing Institutional Setting", *Journal of Australian Institute of Agricultural Science*, Vol. 27, No. 4 (December, 1961).

E. J. Waring, "Rural Credit", *Farm Policy*, Vol. 2, No. 3 (December, 1962).

to supply the requirements after large scale pasture improvement.[9] Many graziers are unwilling to purchase sheep or to seek sheep other than from the accustomed sources of supply. To avoid this difficulty an increase in cattle numbers is often favoured. However, the high prices and general scarcity of suitable cattle, the danger of bloat losses on clover dominant pastures, price uncertainty and a greater susceptibility to adverse seasonal conditions, do to some degree offset the advantages of cattle. These advantages include an apparent better ability to take advantage, in the early stages, of pastures improved by aerial topdressing and by broadcasting clover among natural grasses.

In the succeeding sections, we have taken some account of anticipated difficulties in roughly doubling sheep population on less than half of the area of New England by assuming that a programme of pasture development is followed, which requires some 10-12 years for this full increase to come about. Schemes which achieve the same carrying capacity in shorter periods could be conceived, if the sheep were available. Perhaps under such conditions sheep could be bid away from purchasers in other areas so that shifts in the location of wool production occurred, possibly with greater output per sheep and reduced variability in annual wool output. But as the nature and consequences of such shifts could be little more than a matter of speculation, we have limited our discussion to a type of development which is already in practice and more readily related to empirical experience.

3. THE AREA CONSIDERED

The hypothetical development discussed is limited to the Armidale Pastures Protection Board District, which is approximately the southern half of the New England Tablelands. The area is some 2.6 million acres in extent, of which 0.19 million acres is very steep and rocky and so unsuitable for pasture improvement. An estimated 0.7 million acres is already pasture improved, leaving 1.7 million acres suitable for further development. The area ranges in elevation from 3,000 to 4,000 feet, while rainfall varies between 30 inches and 40 inches per annum in general rising to 50 inches or 60 inches on the edge being greater the more easterly the location considered. The sheep population at December 31, 1961, was 2.55 million and the cattle population 0.16 million.

Fine wool production from merino wethers is still a dominant source of income, although wool production from flocks of mixed sexes and fat lamb production is increasing in importance following pasture improvement. Specialized cattle properties tend to be large and found on the more broken "gorge country" to the east, where dingoes are a problem in sheep husbandry. Most sheep properties run the traditional 3 per cent cattle.

[9] As an example of the rate of increase in carrying capacity which may be experienced. Farm A of the Waring and Muir study carried more than doubled numbers of sheep within eighteen months of overall aerial topdressing and broadcasting of clover. A survey of some twenty properties (E. J. Waring and N. H. Sturgess unpublished data) shows this to be above average but by no means exceptional.

Theoretical and Empirical Bases

In estimating expenses, returns and methods of improvement, we have adopted the results of a series of dynamic linear programming analyses by Pearse. These are based on a district survey (especially in the Walcha area) of farmers' experience with various methods of pasture improvement.

The maximand is net income over a period of 20 years, and it is assumed pasture establishment is complete within ten years. The programmes are based on returns from wool production from merino wethers, with all needed improvements (fencing, increased wool shed capacity, augmented water supplies, etc.) as well as sheep purchases charged against income. The principal differences in programmes arise from variations in the amount of borrowed capital available from year to year (which is, however, assumed to be constant in any programme) with provision for carrying forward unexpended borrowed funds from one year to the next.

Three possible means of pasture improvement are considered in any one programme of development. Prepared Seed Bed (P.S.B.), Aerial Top-dressing (A.T.D.) and Rip Combining (R.C.). Rip-combined land has lower initial cost, carrying capacity and chance of failure than P.S.B. (The notation R.C. 5,2 is interpreted as pasture ripped up in year 5 and oversown with grass in year 12.)

The Development Programmes Considered

The first programme considered assumes that there is 12s. of capital per acre available and that the whole area is under some form of improved pasture in 10 years. Table 1(A) shows how much and which method of improvement would be used each year on a property of 1,000 acres. Although the 1,000 acres is fully pasture improved in 10 years, investment continues until the nineteenth year (purchase of new capital items, sheep, fencing, etc.).

Total investment (20 years) per 1,000 acres is £15,623, see Table 1(A). The programme becomes self financing from year 14 so that the total borrowed capital would be £8,400. Assuming the loan is to be repaid as soon as possible, a property might be expected to be debt free (after paying 6 per cent interest) by the end of the eighteenth year. See Table 2(A).

Assuming that the plan feasible for 1,000 acres can be applied to the entire 1.7m. acres of land assumed suitable for improvement, the total capital outlay would be £26.6m. The total borrowed capital being £14.3m. The debt level would increase at approximately £1.02m. per year (for 13 years).

Over the twenty years the owner of a 1,000 acre property shows an increase in disposable income of about £5,000, but receives this after year 18. He does, of course, acquire control of substantially increased assets. Table 2(A) traces this debt profile.

The second programme of development should be particularly suited to the more broken country in New England, and to those properties which have a lot of dead timber in the paddocks, because it includes a clearing

TABLE 1

Expected Results of Following Programme 1, per 1,000 acres, assumed Wool Price 5s. per lb. at the Farmgate (£'s)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Method / Year / Acres																				
A. CAPITAL INVESTMENT																				
PSB 1 100	520	322	480	160	190	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ATD 10 490	..	..	..	..	..	..	..	..	..	921	823	882	980	1,029	637	392	735	..	588	..
RC 29 100	..	241	202	160	270	160	160	80	50	100	80	130	100	..	..	..	..	..	..	..
RC 52 80	..	..	..	..	192	161	128	216	128	128	40	80	64	104	80	..	..	..	..	..
RC 62 230	..	..	..	..	..	554	464	368	621	368	368	230	276	391	230	..	..	..	..	..
Total Investment	520	563	682	320	652	915	752	664	799	1,517	1,311	1,322	1,420	1,524	947	392	735	..	588	..
B. INCOME																				
PSB 1 100	—5	—14	—7	227	297	214	226	232	335	314	360	366	369	361	358	358	358	358	358	358
ATD 10 490	..	..	..	..	..	..	..	..	..	..	73	—102	34	411	622	788	730	779	1,166	1,566
RC 29 100	..	..	10	—5	57	97	106	183	138	213	314	366	366	366	366	366	366	366	366	366
RC 52 80	..	..	..	..	..	8	—40	46	77	84	146	110	170	251	292	292	292	292	292	292
RC 62 230	..	..	..	..	..	..	23	—115	131	223	243	287	437	524	763	841	841	841	841	841
Total Income	— 5	—14	—3	222	354	319	315	346	681	834	1,136	1,027	1,376	1,913	2,401	2,645	2,587	2,636	3,023	3,423
Income minus Investment ..	—525	—577	685	—98	—298	—596	—437	—318	—118	—683	—175	—295	—44	389	1,454	2,253	1,852	2,636	2,435	3,423
Net of annual costs such as maintenance dressings of fertilizer and interest charges.																				
C. ADDED INCOME FROM WOOL																				
PSB 1 100	..	25	185	455	545	567	590	590	590	675	675	675	675	675	675	675	675	675	675	675
ATD 10 490	..	..	..	..	..	..	..	..	..	..	122	441	686	1,239	1,680	1,896	2,116	2,116	2,327	2,817
RC 29 100	..	25	118	207	275	365	455	510	500	500	625	675	675	675	675	675	675	675	675	675
RC 52 80	..	..	..	..	..	20	94	165	220	292	364	400	400	500	540	540	540	540	540	540
RC 62 230	..	..	..	..	..	..	57	271	476	632	839	1,150	1,150	1,437	1,552	1,552	1,552	1,552	1,552	1,552
Total Added Income from Wool		50	303	662	817	952	1,196	1,536	1,786	2,099	2,625	3,341	3,586	4,526	5,122	5,311	5,158	5,158	5,169	6,259

TABLE 2

Accumulative Income Minus Investment + 6 per cent Interest

(A) Programme 1

Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
—556	—1,201	—1,999	—2,222	—2,671	—3,463	—4,134	—4,719	—5,127	—6,159	—6,714	—7,430	—7,922	—7,985	—7,311	—5,361	—3,720	—1,149	+1,286	+3,423

(B) Programme 2

—816	—1,499	—2,357	—3,312	—4,129	—4,811	—5,275	—6,629	—7,426	—8,258	—9,031	—9,081	—8,413	—6,849	—5,614	—3,451	—1,382	+1,754	+3,136	+3,136

TABLE 3

Expected Results of Following Programme 2, *per* 1,000 *Acres. Assumed Wool Price* 5s. *per lb. at the Farmgate* (£'s.)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Method Year Acres																				
A. CAPITAL INVESTMENT																				
PSB 1 70	550	225	336	112	133	28	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ATD 1 115	216	193	207	230	242	150	92	173	..	138	..	..	..	..	..	..	..	..	..	..
ATD 2 100	..	188	168	180	200	210	130	80	150	..	120	..	..	..	..	..	..	..	..	..
ATD 4 200	..	..	..	376	336	360	400	420	260	160	300	..	240	..	..	..	..	..	..	..
ATD 8 515	..	..	..	..	..	..	..	968	865	927	1,030	1,082	670	412	773	618	..	..	..	..
Total Investment ..	766	606	711	898	911	748	622	1,641	1,275	1,225	1,450	1,082	910	412	773	618	..	..	..	..
B. INCOME																				
PSB 1 70	—4	—10	—5	159	208	150	158	162	235	220	252	252	252	252	252	252	252	252	252	252
ATD 1 115	..	17	—24	—8	97	146	185	171	183	274	357	357	357	357	357	357	357	357	357	357
ATD 2 110	..	..	15	—21	—7	84	127	161	149	159	238	310	310	310	310	310	310	310	310	310
ATD 4 200	..	..	..	..	30	—42	—14	168	254	322	298	318	476	620	620	620	620	620	620	620
ATD 8 515	..	..	..	..	..	..	..	..	77	—108	36	432	654	829	767	819	1,226	1,597	1,597	1,597
Total Income ..	—4	7	—14	130	328	338	456	662	898	867	1,181	1,669	2,049	2,368	2,306	2,358	2,765	3,136	3,136	3,136
Income minus Investment	—770	—599	—725	—768	—583	—410	—166	—979	—377	—358	—269	+587	+1,139	+1,956	+1,553	+2,358	+2,147	+3,136	+3,136	+3,136
C. INCOME FROM WOOL																				
PSB 1 70	..	17	129	318	311	396	413	413	413	472	472	472	472	472	472	472	472	472	472	472
ATD 1 115	..	29	103	161	290	394	445	497	546	661	661	661	661	661	661	661	661	661	661	661
ATD 2 100	..	..	25	90	140	253	343	387	432	432	475	575	575	575	575	575	575	575	575	575
ATD 4 200	..	..	..	..	50	180	280	506	680	774	864	864	950	1,150	1,150	1,150	1,150	1,150	1,150	1,150
ATD 8 515	..	..	..	..	..	..	..	..	128	463	721	1,302	1,766	1,993	2,225	2,225	2,446	2,961	2,961	2,961
Total Added Income from Wool ..	..	46	257	569	791	1,223	1,481	1,803	2,156	2,687	3,193	3,874	4,424	4,851	5,083	5,083	5,304	5,819	5,819	5,819

charge of £2 10s. 0d. per acre for any improvement using ground methods. The details of the programme is shown in Table 3. This programme assumes capital is available at the rate of 16s. per acre each year. The programme is self financing from year 12. Borrowed capital would amount to £10,853 (see Table 3(A) for 1,000 acres, or £18.5m. for the whole 1.7m. acres).[10]

The loan is amortized by eighteenth year, the 1,000 acre property showing an increase in disposable income of £8,000, which is greater than for Programme 1 because the area is developed more rapidly. Table 2(B) traces this debt profile.

4. THE AGGREGATE EFFECTS

Because of the variety of methods of improvement advocated, it is considered that either of the plans suggested could be approximated over the next 20 years on farms in the Armidale Pastures Protection Board District. It is clear that, especially for older men the inducement to undertake such investment is not necessarily strong. If most rapid amortization of debts is aimed for the individual grazier on a property of modal size (under 1,500 acres) would have a greatly increased turnover, but no additional disposable income after paying instalments on borrowed money for the twenty years from commencement of the development programme. He may well consider that he is merely "working for the banks". Current taxation concessions should not logically alter such a conviction where it is held.

But the effect, for the rest of the economy of aggregate adoption of such programmes, is of interest. Table 4 shows the gross on farm value of added wool production for the area, contrasted with the annual capital input, which it is assumed will be made available in some way as loans. At the assumed wool price of 5s. per lb., added income exceeds borrowings in five years or less.

TABLE 4

Expected Value of Added Wool Produced each Year from 1·7 *Million Acres* (£,000's)

Year	Programme 1	Programme 2
1	0	0
2	85	78
3	515	437
4	1,125	967
5	1,388	1,345
6	1,618	2,079
7	2,033	2,518
8	2,611	3,065
9	3,036	3,665
10	3,568	4,568
11	4,462	5,428
12	5,679	6,586
13	6,096	7,521
14	7,694	8,247
15	8,707	8,641
16	9,074	8,641
17	9,448	9,017
18	9,448	9,892
19	9,807	9,892
20	10,640	9,892
Annual Investment ..	1,020	1,300

[10] Both improvement schemes are based on a wool price of 5s. per lb. *but* they make no allowance for income tax.

Over the twenty-year period the aggregate maximum debt level, investment and additions to gross on-farm income are as shown in Table 5.

TABLE 5

Gross Financial Effects of Investment Programmes (£,000's)

Programme	Maximum Debt Level	Total Investment	Added Income from Wool
1	13,580	26,559	97,041
2	15,437	24,902	102,479

In addition to the 5s. wool price at the farm gate a further 6d. to 9d. per lb. would be added by freight, commission, cartage, wharfage, and similar charges for value added within Australia to a predominately exported commodity.

The effect of fully implementing the proposed development plans could be summarized broadly in these terms: the loan of from £1m. to £1.8m. per year up to a maximum of £14m. to £17m. would generate rural investment on 1.7m. acres of between £25m. and £27m. and increase gross wool incomes over a twenty-year period by about £100m. Of this investment, £11 million (in round figures) would be represented by the purchase cost of additional sheep depastured in the area.

In the early stages of the programme there migh be some decrease in fat lamb production away from the tablelands, as the prices assumed for wether replacements (buy at £4, sell c.f.a. at £2) would make their production competitive with fat lamb raising. There might also be a transfer of wool production to the tableland at the expense of other areas. Before further considering the implications of these hypothetical investment programmes, some alternatives will be discussed.

Alternative Stocking Programmes

Wethers were chosen as the only revenue producing enterprise, because it was found that there was very little difference in net income to the farmer on properties with an all wether flock and those with a combination of wethers and ewes breeding replacements. James[11] supported this belief; he found that the return to capital from wether flocks was 2.9 per cent while the return to flocks breeding replacements was 2.8 per cent. It was considered necessary to consider the effect breeding flocks, instead of wether flocks, might have on total wool production (assuming that increasing wool production is the principal purpose of the loan) for two reasons. First, only 22 per cent of properties in the Armidale Pasture Protection Board District are wether flocks, while approximately 68 per cent either breed and/or buy their replacements. Second, the difficulty of the demand for young wethers being greater than the supply. It is estimated the whole area would require approximately 3.5 million sheep over the 20 years. If the requirements were spread evenly over the 20 years, 170,000 (or 50 per cent more than present purchases) would be needed each year. However, the programmes call for approximately 520,000 sheep in one of the years 10 to 13; this is nearly double the usual purchase of 300,000 sheep per year.

[11] James, *op. cit.*

A theoretical budget for a flock of half wethers and half breeding ewes showed that the farmer's net income was approximately the same for the two enterprises. But the income from wool decreased by approximately 30 per cent with the change from all wethers to breeding replacements. Although this change does not affect producers (it may reduce taxation liabilities) it does have a marked effect on the ability of the development scheme to increase export earnings. For Programme 1 the annual export earnings decrease from 4.75 m. (average over 20 years) to approximately £3.3m.; while for Programme 2 the decrease is from £5m. to £3.75m. approximately. Even at these lower levels the development scheme is still a significant means of increasing export earnings through wool production as well as ultimately improving the economic position of all producers involved.

Another popular combination of enterprises is sheep with cattle. From a theoretical budget where each 1,000 acre unit run 38 head of cattle, displacing some 300 sheep, it was deduced that producers income remained approximately the same (thus not affecting the ability of the producer to repay the loan). The receipts from wool decreased by £665 per year for each 1,000 acre unit. Thus wool income (export income) for Programme I would decrease from approximately £4.75m. to £3.42m. for Programme 2 from approximately £5m. to £3.87m.

This assumes that none of the beef produced is exported. If beef were to be exported, the effect on the ability of the scheme to increase export earnings would be negligible.

The Imported Components

The three most important imported goods required are jute for wool packs, rock phosphate for superphosphate and some veterinary requirements, such as dips and drenches. The extra amount of these goods necessary to meet programme requirements is small relative to the present amount required. In the case of superphosphate an extra 85,000 tons is required each year for the first 10 years and thereafter 42,500 tons. Present imports are 1,382,173 tons. In the case of jute, an estimated extra 0.147m. wool packs would be required each year. The present annual requirement is approximately 5.2m. packs.

Effects Within the Australian Economy

It is not expected the development programmes suggested would result in substantial increases in the permanent labour force on New England properties; although there would be an increased demand for casual and seasonal labour such as shearers, fencers and for construction work on sheds, yards and further watering points.

There would be an increased demand for carriers, fertilizer workers, fuel and oil and other services centred on country towns, and a commensurate demand for an increase in the products of industries servicing agriculture at a distance. Added use would be made of the relatively well developed communication system, already considerably used by some non-residents.

It cannot be accepted as axiomatic that the best way to deploy investment funds in agriculture is by broadening the existing land base and settling more people on the land. There may be social and political reasons which provide justification for creating new centres of population, but in favour of a proposal such as this present one is the fact that resources of land and labour are quite clearly being under-utilized in a district with relatively low production uncertainty, well served with roads, railways, airlines and similar public utilities. Furthermore, there is evidence that additional development *via* pasture improvement would reduce the impact of "cost-price squeeze" conditions in New England generally.[12]

It may be that the addition to the Australian clip, 20 years hence, of 4.2 million lb. merino wool from 3.5 million sheep (representing less than $2\frac{1}{2}$ per cent by weight of current production) would reduce the prices received for the entire clip. The increment to wool export income might then be as low as, say, $1\frac{1}{4}$ per cent.[13] This, nevertheless, represents a sum of about £4m. at current prices, exceeding the cost of imports needed to secure this added output.

We have suggested that some of the extra production could be in the form of beef, while fat lamb production on the Northern Tableland is already increasing on pasture improved properties. Even assuming all the added output to be in the form of wool, this wool will be produced at lower unit costs than at present prevail in the immediate district and in many other parts of Australia. Even if it be realistic to take a pessimistic view of wool's future prospects, it does not follow that we should not expand production in low cost areas.[14]

5. GENERAL DISCUSSION

We have established that if graziers on 1.7m. acres of New England in aggregate invest according to certain programmes computed as optimal on the basis of fairly wide observations of current behaviour and production they will increase turnover by something like six or seven times the maximum amount of money at risk to them in loans in the next 20 years (see Table 5). In doing so they would add perhaps £50m. to £80m. to net export earnings. These calculations have been based on the assumption that plans computed by hypothetical 1,000-acre farms (and approximated in practice on 2,500 to 4,000 acre properties) could be followed, on average, over the whole district.

So far we have assumed that the average New England grazier would contribute no capital towards this investment from income at the current level. The average income of the 28 unimproved properties in James' survey sample of 50 had an average income of £1,380, or including the allowance made for depreciation, less than £1,600 per annum. The average income of all producers on properties of less than 1,000 acres (16 of the 50 sampled) was less than £1,000 per year.

---

[12] *Vide,* e.g., Waring and Muir, *op. cit.*

[13] *Vide,* A. Powell, "Export Receipts and Expansion in the Wool Industry". *Aust. Journal Agric. Econ.,* Vol. 3, No. 2 (December, 1959). The figure quoted is now more than a guess—we are not considering a change in the supply of wool. The composition of the Australian clip would probably be changed in the situation discussed.

[14] *Vide,* J. N. Lewis, "Agricultural Science and Productivity in the Next Decade: Economics", *Journal Aust. Institute Agricultural Science,* Vol. 28, No. 2 (June, 1962).

If the landholder contributes approximately 25 per cent of the funds invested until his loan becomes self financing, that stage is reached much sooner—in about the twelfth year—but until that time the consequences are, as already stated, reduced disposable net revenues from a greater turnover. Not everyone is attracted by such a proposition; just as some of those who have already improved pastures have been motivated by other than monetary considerations (their "duty" to the land, or to their children; the prestige attached to being "progressive"; and the often somewhat precarious and illusory pleasure of "beating" the Taxation Commissioner) so others no doubt balked at the idea of losing some of their autonomy to lenders, and 'living poor to die rich". Still others may have felt that the amount they could afford to spend on development each year would make no significant impact on their properties, and, in fact, some graziers have reached a situation where they have improved pastures, but no extra sheep to stock them. Others have become convinced that the purchase of additional land was a better investment than pasture improvement (sometimes after attempting pasture improvement). Some have made more money dealing in cattle over the last five years than they could from pasture improvement while still others have lost on the same type of transaction.

It is clear that New England is recognized as having sound investment potential, with some justification, by authorities such as the Development Bank. However, should an attempt be made to induce the majority of landholders to place their properties in pawn for the next seventeen years? It is true that these men have a fair idea of the conditions with which they have to contend—as much cannot always be said of those who rush precipitantly into some new settlement schemes to seek their fortune.

We incline to the view that any development scheme should require that the individual have some of his own capital at stake; permit maximum practicable freedom of decision and preservation of independence; and preferably allow some of the potential benefits to nation and individual to be enjoyed in less than 15 to 20 years.

We are convinced that there exist other and more profitable methods of developing New England properties than those outlined. Such a plan was in fact followed by the operator of Farm A of the study by Waring and Muir already cited. However, the wholesale adoption of such plans seem likely to be rendered impossible by reason of the consequent sudden high demand for additional stock that would arise.

There may be better prospects than our experience to date has led us to believe in a policy of expansion with more dependance on the breeding of replacements. Such a policy is somewhat at variance with the general practice of those graziers who have undertaken substantial investment in improved pastures to date, and hence we have little empirical evidence on which to judge. We have, however, suggested that this method of capital accumulation may attract lower taxation commitments than the increase of flocks through the purchase of non-breeding stock.

It can be seen that for none of the individual methods of pasture improvement budgeted in the tables do returns exceed costs (including a 6 per cent interest charge on net investment) in less than the eleven years involved in the case of P.S.B. Accordingly no producer can undertake any substantial area of pasture improvement, lacking a "line of credit" for this period unless he can contribute substantially from existing income towards the project.

In consequence it is to be expected that current lending policy, improved though it is, is unlikely to be able to contemplate loans of the required nature under the existing criteria and policies. At present it is likely to create conditions in New England whereby the "rich get richer and the poor poorer". Without expressing any opinion on the social desirability of such a result, we do advance the opinion that the agricultural terms of trade over the next ten years are likely to move against the primary producer with particularly adverse effects on the small producer.

Since time is one important input in pasture improvement programmes, it would appear that whatever the ultimate ownership of those holdings, especially the small ones, whose owners are unable or unwilling to invest, a case can be argued in favour of some, albeit mild, evangelism, together with even more liberal credit provisions that at present, to facilitate such investment to their own advantage and, apparently, to benefit the community at large.