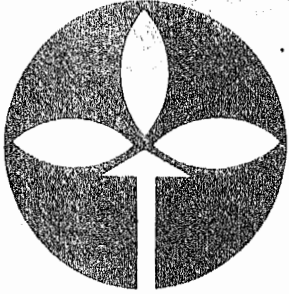


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DEPARTMENT OF AGRICULTURE, SOUTH AUSTRALIA

## Agronomy Branch Report

AGRICULTURAL POTENTIAL OF FOUR AREAS

ON EYRE PENINSULA - 1969

By J.D. McAuliffe  
K.J. Holden

Report No. 14

AGRICULTURAL POTENTIAL OF FOUR AREAS

ON EYRE PENINSULA - 1969

This report on the agricultural production and potential of certain areas on Eyre Peninsula has been prepared by Messrs. J.D. McAuliffe, Senior Agricultural Adviser and Mr. K.J. Holden, District Agricultural Adviser, Minnipa, after consultation and discussion with Mr. J.D. Habel, Livestock Field Investigation Officer, Port Lincoln, Mr. K.G. Bicknell, District Agricultural Adviser, Port Lincoln and Mr. R.J.R. Hodge, Stock Inspector, Cleve.

## INTRODUCTION:

The report, which deals with each area shown on the appended map, contains the following:-

(1) A calculation of the present production of the areas defined. This was determined by extracting the statistical figures for each of the hundreds concerned and using estimates based on local information where figures were not available for the 1966-67 season. (The latest figures available for hundreds). These were then converted to 1968-69 production by increasing by the percentage increase recorded for counties.

(2) An estimate of the development which could take place in each area without a reticulated water supply. Without further supplies of water the livestock enterprises cannot expand very greatly and without them it is unlikely that cropping will expand to the full. It can be expected, however, that crop yields will increase both on the land already fully developed and that partly developed.

(3) The estimated production possible in each area when fully developed with an adequate supply of good quality water. It can be expected that the area sown to crops of wheat, barley and oats will slightly more than double over the four areas and that grazing livestock numbers when expressed as dry sheep equivalents will increase by  $2\frac{1}{2}$  times the present numbers in Areas B and C where reticulated water is at present available and greater in A and D. It is expected that big increases will take place in beef cattle numbers and a suggested relationship to sheep and cattle numbers is incorporated in the estimate.

Much of the information contained in this report was obtained by a "hundred by hundred" survey and interviewing knowledgeable landholders to ascertain areas cleared, cleared between 1965 and 1968 and areas still under scrub but suitable for agricultural pursuits. Allowances were made for roads, reserves, shelter belts, etc.

SUMMARY:

A summary of the potential areas suitable for agriculture for the four proposed areas is as follows:-

<u>Area</u>	<u>Total</u> (acres)	<u>Cleared</u> <u>1965-68</u> (acres)	<u>Likely to be</u> <u>Cleared in</u> <u>Future</u> (acres)	<u>Total</u> <u>Potential</u> (acres)
A	490,000	93,000	110,000	300,000
B	790,000	144,000	168,000	560,000
C	2,146,000	218,000	440,000	1,652,000
D	<u>677,000</u>	<u>71,000</u>	<u>168,000</u>	<u>538,000</u>
<u>Totals</u>	<u>4,103,000</u>	<u>526,000</u>	<u>886,000</u>	<u>3,050,000</u>

This table indicates that it is expected that approximately 75% of the total area involved in the proposed schemes will eventually be brought into production. It also indicates that a substantial area has been cleared since 1965. There are several reasons for this. Land clearing techniques, including developments in stone rolling, have improved to the extent that it is now economical to clear country that would not have been cleared ten years ago. It can be expected that clearing methods will further improve in future. The value of superphosphate and the use of suitable legumes in the crop rotations is now recognised by landholders. A remarkable increase in the use of superphosphate has taken place during the past decade. In the western division which includes the areas under consideration, super usage rose from 70,000 tons in 1961-62 to 126,000 tons in 1966-67. This represents an 80% increase. During the same period the amount used over the whole State increased by 30%.

Associated with the greater use of superphosphate, a wider use of legumes more suitable to the area has brought about a substantial increase in soil fertility and at the same time provided a greater quantity of much better quality feed for livestock.

This recognition by farmers that phosphorus and nitrogen are the main deficiencies in all soils on Eyre Peninsula and their willingness to correct the situation has

been largely responsible for the increases which have already taken place. It can be expected that even greater increases in production will take place in the future. The general opinion amongst landholders in the area is that production can be doubled with future development, and improved management providing adequate water supplies are available.

There is a fairly high drought frequency in areas under consideration. One year in every five or six can be classified as a drought or semi-drought. Uncertain "breaks" to the season and early harsh "finishes" characterise the drier years. Area D is affected more severely than areas A and B.

AREA A:

This area includes the hundreds of Cocata and Pordia and parts of the hundreds of Kappakoola, Palabie, Pinbong and Yaninee in County Le Hunte; the hundreds of Travers, Downer, Wallis and an unnamed hundred in County Robinson and part of the hundred of Pildappa in County Bosanquet.

The soils are mostly sand ridges and flats. Deep leached sands occur on the ridges with sands of varying depth over dense hard clay in the flats. A considerable area of shallow calcareous light grey mallee and rendzina soils occur in the south west corner. Surface limestone is common here as small outcrops on ridges.

Rainfall varies between 13" and 14½".

There is no underground water supplies in this area and the soils are unsuitable for dam storage.

The deeper leached sandy soils of this area besides being deficient in nitrogen and phosphorus would also need trace elements to reach full production.

These soils will also require careful management to prevent soil erosion in the less favourable seasons. Some would be better suited to lucerne pastures than to regular cultivation for cropping.

Details of present production, estimated production without reticulated water, and estimated production when fully developed with adequate reticulated water are contained in the following tables.

AREA A: PRESENT PRODUCTION

Crop Acres	Sheep Nos.	Wool Production	Sheep Sales	Beef Cattle Nos.	Beef Sales	Dairy Cattle Nos.	Dairy Sales	Pig Nos.	Pig Sales	Total
46,500 @ \$20 \$930,000	41,300	454,300 @ 40c. \$181,720	10,738 @ \$4 \$42,952	500	187 @ \$90 \$16,830	35	20 @ \$100 \$2,000	750	1,312 @ \$25 \$32,800	\$1,206,300

ESTIMATED PRODUCTION WITHOUT RETICULATED WATER

60,000 @ \$20 \$1,200,000	50,000	550,000 @ 40c. \$220,000	13,000 @ \$4 \$52,000	600	225 @ \$90 \$20,250	35	20 @ \$100 \$2,000	850	1,490 @ \$25 \$37,250	\$1,531,500
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ESTIMATED PRODUCTION WHEN FULLY DEVELOPED AND WITH ADEQUATE RETICULATED WATER

99,000 @ \$20 \$1,980,000	150,000	1,650,000 @ 40c. \$660,000	39,000 @ \$4 \$156,000	7,500	2,812 @ \$90 \$253,080	35	20 @ \$100 \$2,000	1,300	2,275 @ \$25 \$56,875	\$3,108,000
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**AREA A:**

**DETAILS OF PRESENT PRODUCTION**

County/Hundred	Area of Hundred Acres	Area Capable of Development Acres	Wheat, Barley & Oats for Grain Acres	Production 1966-67				
				Sheep	Beef	Cattle		Pigs
						Dairy		
<b>MUSANQUET:</b>								
Pildappa (pt.)	21,000	2,000	-	1,000	-	-	-	-
<b>LE. HUNTE:</b>								
Cocata	76,000	46,000	3,690	2,000	-	-	-	-
Kappakoola (pt.)	58,000	45,000	8,940	7,410	120	35	303	-
Palabic (pt.)	15,000	14,000	4,935	4,221	121	5	91	4
Pinbong (pt.)	48,000	34,000	3,006	2,000	-	-	-	-
Pordia	60,000	55,000	4,820	3,000	-	-	-	-
Yaminee (pt.)	20,000	19,000	3,460	3,506	4	7	90	-
<b>ROBINSON:</b>								
Travers	29,000	24,000	2,371	3,580	2	3	100	-
Devnar	24,000	18,000	1,000	5,000	-	-	-	-
Wallis	74,000	20,000	4,950	5,000	-	-	60	-
Unnamed	63,000	20,000	-	1,500	-	-	-	-
<b>Totals</b>	<b>488,000</b>	<b>297,000</b>	<b>37,172</b>	<b>38,217</b>	<b>247</b>	<b>50</b>	<b>646</b>	<b>756</b>
<b>Adjusted to Present Production</b>			<b>46,465</b>	<b>41,274</b>	<b>494</b>	<b>35</b>		<b>756</b>



AREA B:

The hundreds included in this area are Addison, Campbell, Downer, Forrest, pt. Inkster, Rounsevell, Wallis, Witera, Wrenfordsley, Wright, and an unnamed hundred in County Robinson.

Shallow calcareous and rendzina soils occur over the greater part of this area. Some of this country is too stoney for cultivation but pockets of arable soil occur throughout. Firm undulating slopes of mallee soils occur over most of the hundreds of Rounsevell, Witera and Wrenfordsley. These are well suited to cropping and pasture production. An area taking in parts of the hundreds of Wallis, Witera, Inkster and the whole of Addison is broken plain country with limestone outcrops and light grey calcareous mallee soils. A coastal strip extending through the hundreds of Wrenfordsley, Rounsevell and Wright contains deep calcareous sands which are deficient in manganese.

Rainfall varies between 13" in the north to 16½" in the coastal hundreds in the south.

Most of the area has no underground water supply and except in isolated cases suitable subsoils are not available for the construction of dams for water storage. However, a basin of underground water does occur and is mostly contained in the hundreds of Forrest and Campbell. The fresh water in this basin occurs as a band on top of very salty water. Water has also been obtained from a few bores in the hundred of Wright but this is of poor quality and supply. The bores tend to dry up after limited service.

Generally the soils of this area are productive agricultural soils. The development of modern equipment which greatly reduces clearing costs and the practice of stone rolling has made it possible to utilise much more country for agricultural purposes. Except for the manganese deficient coastal areas in Wrenfordsley, Rounsevell and Wright, superphosphate and legume pastures are all that is needed to increase production of crops and livestock fodder. Legumes grow well in the soils of the area.

Details of present production, estimated production without reticulated water, and production when fully developed with adequate reticulated water, are contained in the following tables.

AREA B: PRESENT PRODUCTION

Crop Acres	Sheep Nos.	Wool Production	Sheep Sales	Beef Cattle Nos.	Beef Sales	Dairy Cattle Nos.	Dairy Sales	Pig Nos.	Pig Sales	Total
88,000	126,000	1,386,000	\$32,760	860	\$322	158	\$100	1,606	\$2,800	
@ \$20		@ 40c.	@ \$4		@ \$90		@ \$100		@ \$25	
Production Value	\$1,760,000	\$554,400	\$131,040	\$28,980	\$10,000	\$870,000	\$2,554,400			

ESTIMATED PRODUCTION WITHOUT RETICULATED WATER

130,000	170,000	1,870,000	\$44,200	1,000	\$375	158	\$100	2,000	\$3,500	
@ \$20		@ 40c.	@ \$4		@ \$90		@ \$100		@ \$25	
Production Value	\$2,600,000	\$748,000	\$176,800	\$33,750	\$10,000	\$87,500	\$3,656,000			

ESTIMATED PRODUCTION WHEN FULLY DEVELOPED AND WITH ADEQUATE RETICULATED WATER

225,000	281,000	3,091,000	\$73,060	14,000	\$5,250	158	\$100	3,000	\$5,250	
@ \$20		@ 40c.	@ \$4		@ \$90		@ \$100		@ \$25	
Production Value	\$4,500,000	\$1,236,400	\$292,240	\$472,500	\$10,000	\$131,250	\$6,642,400			

AREA 13: DETAILS OF PIGS ET PRODUCTION

County/Hundred	Production 1966-67									
	Area of Hundred Acres	Area Capable of Development Acres	Wheat, Barley & Oats for Grain Acres	Livestock Numbers						
				Sheep	Beef Cattle	Dairy Cattle	Pigs			
<b>ROBINSON:</b>										
Addison	70,000	34,000	1,000	500	-	-	-	-	-	-
Campbell	77,000	63,000	8,306	15,000	50	30	200	200	200	200
Downer	24,000	18,000	1,000	5,000	-	-	-	-	-	-
Forrest	77,000	70,000	10,329	17,602	200	32	125	125	125	125
Inkster (part of)	62,000	52,000	9,020	9,720	20	18	116	116	116	116
Reunsevell	93,000	83,000	16,495	30,110	83	105	270	270	270	270
Wallis	74,000	20,000	4,950	5,000	-	-	100	100	100	100
Viters	98,000	83,000	11,540	17,023	44	15	167	167	167	167
Wrenfordale	80,000	64,000	3,610	5,000	30	15	200	200	200	200
Wright	68,000	55,000	4,146	10,545	3	11	195	195	195	195
Unnamed Hundred	63,000	20,000	-	1,500	-	-	-	-	-	-
<b>Totals</b>	<b>786,000</b>	<b>562,000</b>	<b>70,396</b>	<b>117,000</b>	<b>430</b>	<b>226</b>	<b>1,373</b>	<b>1,373</b>	<b>1,373</b>	<b>1,373</b>
	<b>Adjusted to Present Production</b>	<b>87,995</b>	<b>87,995</b>	<b>126,360</b>	<b>860</b>	<b>158</b>	<b>1,606</b>	<b>1,606</b>	<b>1,606</b>	<b>1,606</b>

AREA C:

Area C includes the hundreds of Blacker, Wallarippie, Bonython, Chillundie, Goode, Guthrie, Pethick and Wandana in County Way; the hundreds of Carawa, Hague, Haslam, Koolgera, Nunnyah, Perlubie, Petina, Wallala, Walpuppie, Yantanabie and Pureba in County Dufferin; and the hundreds of Carina (pt.), Chandada, Condada, Cungena, Finalyson, Karcultaby, Kaldoonera, Moorkitabie, Murray, Scott, Tarlton, Inkster (pt.) and Bockelberg in County Robinson.

Over two thirds of the area is undulating plains of light brown calcareous loamy or sandy mallee soils. To the north sand ridges and flats of light sand over clay soils occur. In the southern part grey calcareous mallee soils are broken by limestone outcrops. Firm undulating slopes of mallee and terra rosa soils occur in the north west corner including the hundred of Goode.

Rainfall varies from 12" in the north west but most of this area receives approximately 13" of rain.

Much of the area C is serviced by the present water scheme but no natural supplies of any consequence occur over the remainder of the area.

A few roofed catchments supply limited quantities of stock water.

The mallee soils which occur over so much of this area are productive agricultural soils needing only superphosphate and vigorous legume pastures to ensure high production of crops and livestock fodder. The lighter sand ridges and sand over clay flats to the north may need trace elements and careful management to prevent erosion in the less favourable years.

Details of present production, estimated production without reticulated water, and estimated production when fully developed with reticulated water are contained in the following tables.

**AREA C:**

**FRESHMEAT PRODUCTION**

	Group Acres	Sheep Nos.	Wool Production	Sheep Sales	Beef Cattle Nos.	Beef Sales	Dairy Cattle Nos.	Dairy Sales	Rig Nos.	Rig Sales	Total
Production Value	352,000	284,000	3,094,000	73,060	2,800	1,050	375	250	3,700	6,475	
	@ \$20	@ 40c.	@ \$4c.	@ \$4	@ \$90	@ \$90	@ \$100	@ \$100	@ \$25	@ \$25	
	\$7,040,000	\$1,236,400	\$292,240	\$292,240	\$248,500	\$248,500	\$25,000	\$25,000	\$161,900	\$161,900	\$8,880,000
<b>ESTIMATED PRODUCTION WHEN WHOLLY RECIRCULATED WATER</b>											
Production Value	400,000	365,000	4,015,000	94,900	3,500	1,312	375	250	4,500	7,875	
	@ \$20	@ 40c.	@ \$4c.	@ \$4	@ \$90	@ \$90	@ \$100	@ \$100	@ \$25	@ \$25	
	\$8,000,000	\$1,606,000	\$1,606,000	\$379,600	\$18,080	\$18,080	\$25,000	\$25,000	\$196,900	\$196,900	\$10,325,600
<b>ESTIMATED PRODUCTION WHEN FULLY DEVELOPED AND WITH ADEQUATE RECIRCULATED WATER</b>											
Production Value	660,000	660,000	7,260,000	171,600	33,000	12,375	375	250	6,900	12,075	
	@ \$20	@ 40c.	@ \$4c.	@ \$4	@ \$90	@ \$90	@ \$100	@ \$100	@ \$25	@ \$25	
	\$13,216,000	\$2,904,000	\$2,904,000	\$686,400	\$1,113,750	\$1,113,750	\$25,000	\$25,000	\$301,900	\$301,900	\$18,247,000

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DETAILS OF PRESENT PRODUCTION

AREA C:

County/Hundred	Area of Hundred Acres	Area Capable of Development Acres	Wheat, Barley & Oats for Grain Acres	Production 1966-67								
				Sheep	Beef	Cattle			Pigs			
						Dairy	Beef	Pigs				
<b>VAI:</b>												
Blacker	156,000	128,000	9,910	8,000	50	20	150					
Walanipie			7,839	12,458	125	39	58					
Bonython	58,000	50,000	7,004	6,000	10	-	250					
Chillundie	69,000	60,000	12,570	11,095	49	19	46					
Goode	85,000	73,000	12,980	9,648	2	3	23					
Guthrie	72,000	65,000	11,953	9,000	45	10	50					
Pethick	78,000	25,000	1,200	-	-	-	-					
Vandana	80,000	70,000	19,070	15,774	55	27	153					
<b>DUFFERIN:</b>												
Carawa	64,000	59,000	9,655	9,500	95	20	26					
Hague	64,000	60,000	2,102	1,000	-	-	37					
Haslam	75,000	70,000	17,593	17,050	226	22	30					
Koolgera	64,000	30,000	1,225	1,500	-	-	-					
Nunnyah	83,000	30,000	7,142	5,000	-	-	-					
Perubie	53,000	48,000	7,980	9,238	48	12	70					
Petina	83,000	74,000	18,342	15,461	47	22	82					
Wallela	64,000	39,000	3,330	2,500	-	-	-					
Walpuppie	60,000	56,000	12,608	9,268	121	36	203					
Yanlanahie	61,000	53,000	6,974	10,000	48	18	93					
Purobe	96,000	14,000	1,320	-	-	-	-					

Area C (Contd.):

DETAILS OF PRESENT PRODUCTION

County/Hundred	Area of Hundred Acres	Area Capable of Development Acres	Wheat, Barley & Oats for Grain Acres	Livestock Numbers				
				Sheep	Beef Cattle	Dairy Cattle	Pigs	
<b>ROBINSON:</b>								
Carina (part)	54,000	47,000	8,501	8,929	24	18	388	
Chandada	89,000	80,000	12,006	10,219	73	39	126	
Gondada	50,000	38,000	1,650	1,000	-	-	-	
Gungana	77,000	70,000	13,621	13,399	41	40	306	
Malayson	67,000	64,000	14,971	11,969	27	23	121	15
Kareultaby	48,000	44,000	6,744	5,000	-	10	150	1
Kaldeenara	53,000	45,000	12,921	13,698	12	42	245	
Nierkhitabie	78,000	58,000	3,073	2,000	30	3	30	
Murray	58,000	48,000	7,547	11,000	50	23	230	
Seeth	60,000	52,000	10,123	13,689	83	44	4	
Earlton	64,000	54,000	13,333	11,456	120	35	142	
Inkster (part)	30,000	28,000	4,510	4,860	10	9	98	
Seckelberg	53,000	29,000	1,890	200	-	-	-	
<b>Totals</b>	<b>2,146,000</b>	<b>1,652,000</b>	<b>281,691</b>	<b>260,111</b>	<b>1,393</b>	<b>538</b>	<b>3,191</b>	
<b>Adjusted to Present Production</b>				<b>280,000</b>	<b>2,786</b>	<b>377</b>	<b>3,733</b>	



AREA D:

The hundreds included in this area are Catt, Bartlett, Horn, Moule and O'Loughlin in County Way and Bagster, Burgoyne, Cohen, Keith and Kevin in County Kintore.

Except for an extensive area of coastal plain consisting of dunes or samphire swamps, undulating plains of light brown calcareous mallee soils occur over the remainder of area D.

Rainfall averages approximately  $12\frac{1}{2}$ ".

The local basin at Penong, roofed catchments, odd dams in the hundred of Catt and coastal wells, are the only water supplies in this area at present.

The mallee soils of the area are good agricultural soils which respond to superphosphate and are capable of growing vigorous legume pastures to maintain soil fertility.

Details of present production, estimated production without reticulated water, and estimated production when fully developed, and with adequate reticulated water are contained in the following tables.

AREA D:

PRESENT PRODUCTION

Crop Acres	Sheep Nos.	Wool Production	Sheep Sales	Beef Cattle Nos.	Beef Sales	Dairy Cattle Nos.	Dairy Sales	Pig Nos.	Pig Sales	Total
104,800 @ \$20	71,500	786,500 @ 40c.	18,590 @ \$4	330	124 @ \$90	166	100 @ \$100	1,250	2,190 @ \$25	\$2,560,900
Production Value		\$314,600	\$74,360		\$11,160		\$10,000		\$54,750	\$2,560,900

ESTIMATED PRODUCTION WITHOUT RETICULATED WATER

125,000 @ \$20	90,000	990,000 @ 40c.	23,400 @ \$4	1,500	560 @ \$90	166	100 @ \$100	1,400	2,450 @ \$25	\$1,717,000
Production Value		\$396,000	\$93,600		\$50,040		\$10,000		\$61,250	\$3,111,250

ESTIMATED PRODUCTION WHEN FULLY DEVELOPED AND WITH ADEQUATE RETICULATED WATER

216,000 @ \$20	180,000	1,980,000 @ 40c.	46,800 @ \$4	9,000	3,375 @ \$90	166	100 @ \$100	2,300	4,000 @ \$25	\$5,713,000
Production Value		\$792,000	\$187,200		\$303,750		\$10,000		\$100,000	\$5,713,000

AREA 2: DETAILS OF PRESENT PRODUCTION 1966-67

County/Hundred	Area of Hundred Acres	Area Capable of Development Acres	Wheat, Barley & Oats for Grain Acres		Sheep	Beef	Dairy	Pigs
			LIVESTOCK NUMBERS					
<b>VAL:</b>								
Catt	97,000	85,000	12,265		11,000	30	50	300
Bartlett	59,000	45,000	6,670		9,500	20	50	100
Horn	65,000	60,000	5,721		3,000	-	-	50
Moale	71,000	62,000	18,755		9,725	14	27	356
O'Loughlin	55,000	50,000	8,939		3,000	-	10	100
<b>KINTOM:</b>								
Bugaber	75,000	67,000	9,385					
Burgoyne	75,000	65,000	12,682					
Cohen	74,000	67,000	4,708					
Koth	96,000	30,000	3,546		30,000	100	100	180
Kerin	50,000	7,000	1,170					
<b>Estale</b>	<b>677,000</b>	<b>538,000</b>	<b>83,841</b>		<b>66,225</b>	<b>164</b>	<b>237</b>	<b>1,066</b>
		<b>Adjusted to Present Production</b>	<b>104,800</b>		<b>71,523</b>	<b>328</b>	<b>166</b>	<b>1,247</b>

Criteria Eyre Peninsula Surveys

Areas A, B, C & D

1. Potential Without Further Water:

(a) Stock

Area capable of development less scrub likely to be cleared divided by present D.S.E.'s. = present carrying

A	=	1-4	acres
B	=	1-4 $\frac{1}{2}$	"
C	=	1-3 $\frac{1}{2}$	"
D	=	1-5	"

Adjusted to:-

A	.3	D.S.E.	
B	.45	"	Forrest & Campbell
C	.3	"	
D	.20		Lack of water

(b) Crop

One crop for grain every 3 years.

2. Potential With Water:

(a) Stock

$\frac{1}{4}$  D.S.E. areas A, B and County Robinson in C.

$\frac{1}{2}$  D.S.E. for area D and Counties Dufferin and Way.

(b) Crop

Two crops in 5 years for grain.

3. Proportion of Beef to Sheep:

Ratio of 1 beef to 20 sheep and allowed 10 D.S.E. for each beef animal.

4. Pig Numbers:

Total pig numbers calculated by projecting a 5% annual increase on 1961-65 average figures for a 20 year period for A, B and C. Higher increase suggested in D because it was known that limited water supplies had affected increases.

5. Values:

(a) Wool

Yields of 11 lbs./head for all areas @ 40c. per lb. for total value.

(b) Sheep sales or turn-off

Total sheep by 40% = breeders by 75% lambing less 10% for deaths. Valued @ \$4 per head.

(c) Cattle sales or turn-off

Total cattle number by 50% = breeders by 75% calving valued @ \$90 per head.

(d) Pigs

Total pig numbers divided by 8 (7 - 1 ratio) = breeders by 14 pigs reared per sow = turn-off. Valued at \$25 per head.

