

DEPARTMENT OF AGRICULTURE, SOUTH AUSTRALIA

Agronomy Branch Report

AGRICULTURAL POTENTIAL OF THE AREA PROPOSED

TO BE SUPPLIED WITH WATER FROM THE

POLDA - KIMBA PIPELINE - 1969

By J.D. McAuliffe
K.G. Bicknell

AGRICULTURAL POTENTIAL OF THE ENLARGED
AREA PROPOSED TO BE SUPPLIED WITH WATER
FROM THE POLDA-KIMBA PIPELINE

INTRODUCTION:

This report on the potential of the area to be served by the Polda-Kimba pipeline, contains the following:-

1. A calculation of the present production of the hundreds and part hundreds comprising the area marked on the map. This area includes parts of the hundreds of Caralue, Cortlinye, Kelly, Moseley, Panitya, Pinkawillinie and Solomon in County Buxton, the hundreds of Darke and Pascoe and parts of the hundreds of Boonerdo, Campoona, Jamieson, Palkagee, Rudall, Smeaton, Yadnarie, and Hambridge in County Jervois and part of the hundred of Koongawa in County Le Hunte.
2. An estimate of the development which could take place in the area without a reticulated water supply.
3. The estimated production possible in this area when fully developed and provided with an adequate water supply.

The report has been prepared by Mr. J.D. McAuliffe, Senior Agricultural Adviser, and Mr. K.G. Bicknell, Agricultural Adviser, Port Lincoln, after consultation with Mr. J.D. Habel, Livestock Field Investigation Officer, Port Lincoln and Mr. R.J.R. Hodge, Stock Inspector, Cleve.

SUMMARY:

It is estimated that approximately 500,000 acres are capable of development in the area.

The soils are mainly sands of varying depths over clay in the flats and rises with deeper leached sands on the ridges. Interspersed throughout and in the north and south east of the area red brown earths, mallee and terra rosa soils occur.

Rainfall varies from 14" in the northern parts to 16" in the south.

The calculation of present production is based on 1965-66 statistical figures as these were the latest available for hundreds when the survey was commenced. As statistical information was not available in some instances for the hundreds concerned, estimates were made for these based on local information. The figures were then adjusted to present production by comparison with county figures.

This indicates an average of 140,000 acres sown to the cereals wheat, barley and oats which at the present time would not have reached full potential. Livestock numbers have been calculated to be 180,000 sheep, 1,100 beef cattle, 400 dairy cattle and 1,750 pigs. Details are shown in Appendix 1. Income that could be expected from these enterprises is shown in Appendix 2.

Further production without a reticulated water supply would not be very great for livestock. It would be possible to increase cropping without further water supplied but such development is likely to be much slower without the associated livestock as avenues of increasing income. As indicated in Appendix 2, the increased income likely from cash cropping is approximately \$1.4 million of which the total increase is likely to be of the order of \$1.5 million. This is in line with the statement contained in Mr. Bicknell's earlier report that at present the number of livestock that can be run in the area is limited by lack of water. Because there is some doubt as to how much development would occur for cropping only and this would be influenced greatly by prices, the estimate contained in Appendix 2 could be an optimistic one. However, it would be possible.

Production when the area is fully developed and has adequate water supplies is about double that of present production. It is some 40% higher than possible without further supplies of water which, as indicated above, is greatly influenced by cropping which would be possible without water. It is expected that sheep numbers would increase to 375,000, beef cattle to 8,800 and pigs to 4,600. These figures indicate about double the numbers that would be possible without further water supplies except in the case of dairy cattle which are unlikely to increase to any great extent.

In terms of dry sheep equivalents, this analysis indicates a present carrying of .38 sheep per acre, a possible increase to .45 without a reticulated scheme and .9 sheep per acre when fully developed and with available water.

Water requirements indicated in Mr. Bicknell's previous report on this area were based on the assumption that 2 gallons was required per sheep per day. This figure, which contains an inbuilt safety margin in the figure, has been generally accepted over the years when designing for private supplies.

Requirements are quite variable depending on conditions of temperature, type of feed, level of production, quality of water and other factors. For the purpose of this estimate it seems quite reasonable to use the figure of 1 gallon per sheep equivalent per day for the whole year. This would supply sufficient water when the animals are on dry feed.

It is estimated that the water requirement for livestock, based on 1 gallon per dry sheep equivalent would be:-

468,000 D.S.E. (cattle & sheep)	175,430,000 gallons
4,600 pigs @ 2 gallons per day	<u>3,358,000</u> gallons
	<u>178,788,000</u> gallons

Criteria

When assessing the increased production possible for the Poldá-Kimba pipeline, the following figures were used as a basis for calculation.

It was agreed that it would be possible to develop 75% of the total area.

That it would ultimately carry 1 D.S.E. per acre to be made up by $\frac{3}{4}$ of a D.S.E. for sheep + $\frac{1}{4}$ of a D.S.E. for cattle.

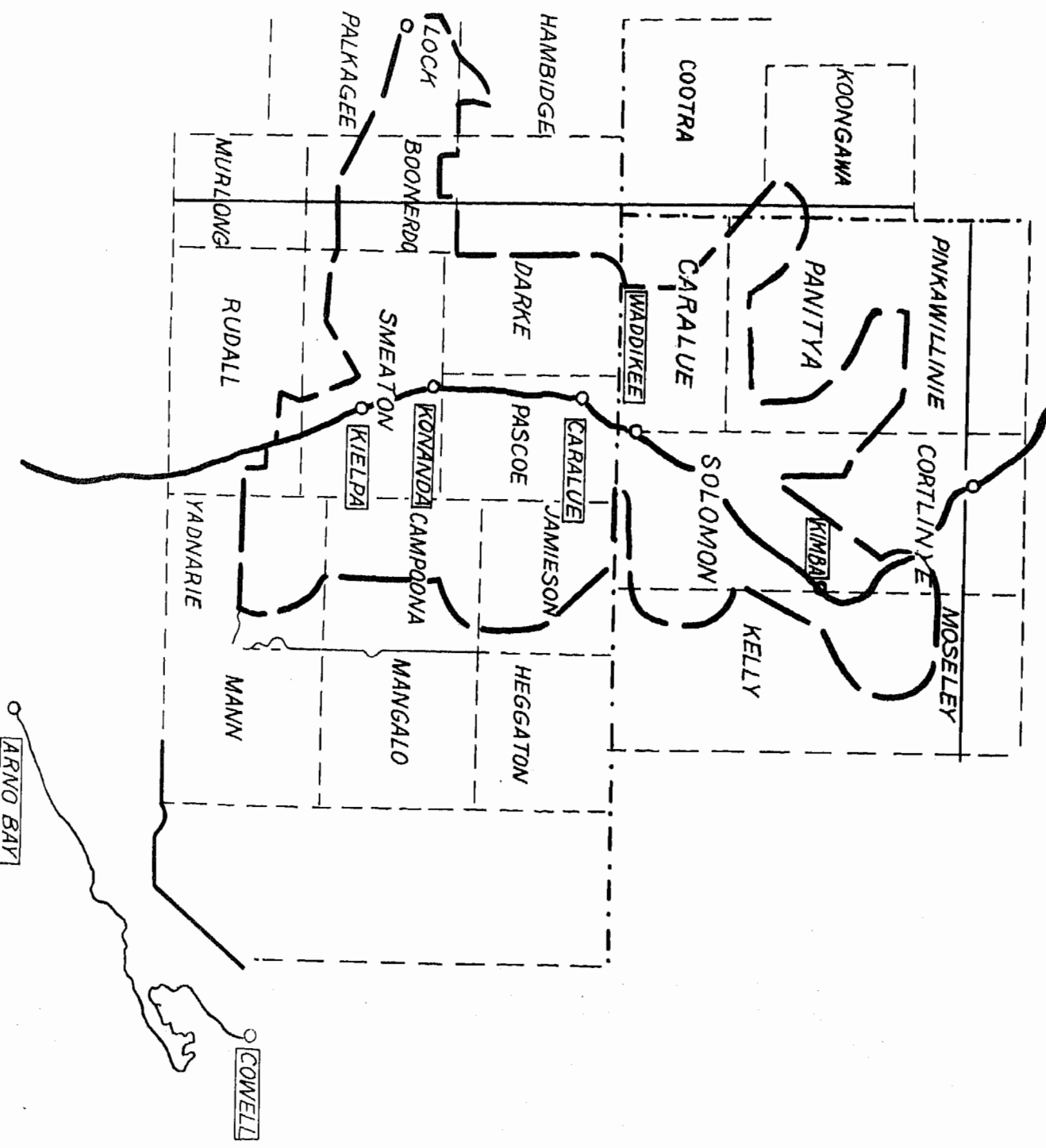
In assessing cattle and pig numbers a 5% increase per annum was established from the previous ten years. This 5% increase per year was projected over a 20 year period.

It was estimated that 40% of the total number of sheep would be ewes. Lambing percentage was set at 75% with 10% written off for deaths. This allowed for a 65% turn off yearly of sheep.

For cattle the figure was set at 50% of total as breeders. A 75% calving was used as the turn off numbers each year.

A ratio of 7:1 was fixed for sows and each sow to turn off 14 pigs each year.

When assessing water requirements, 1 gallon per day per D.S.E. and 2 gallons a day for pigs was allowed.



APPENDIX I

County/ Hundred	Area of Hundred	Area Within Proposed Scheme Capable of Development	Production 1965-66				
			Wheat, Barley & Oats, for Grain	Sheep	Beef	Cattle, Dairy	Pigs
			Livestock Numbers				
			Acrea				
BUYON:							
Caraluo	66,680	36,000	9,506	13,000	68	13	161
Cortliffe	77,280	14,000	5,443	5,400	73	7	115
Kelly	90,560	7,000	2,327	2,800	20	8	28
Moate	76,800	28,500	3,349	9,000*	50*	-	100*
Paritya	66,120	30,000	1,810	3,000*	10*	-	20*
Pinkwillimie	112,160	21,000	6,200	4,300	14	9	14
Soleman	90,720	61,500	20,169	22,900	123	41	384
JERVOLS:							
Boonarde	52,400	27,000	3,640	4,200	14*	-	35*
Camposna	64,000	33,000	8,344	13,400	41	31	33
Barke	63,200	49,000	14,837	16,000	61	31	136
Jamigean	63,340	31,500	3,676	5,000*	14*	-	33*
Palkagee	57,600	22,000	8,051	11,900	15	29	83
Passoe	64,640	49,000	20,623	20,800	63	30	146
Redall	80,640	6,000	2,617	3,400	23	17	41
Seentee	88,320	55,500	21,780	28,400	63	151	92
Yedmarie	64,000	16,000	6,244	9,100	65	46	99
Hambidge	92,000	7,000	112	500*	-	-	-
LA. WARR:							
Edengrove	61,940	4,500	909	1,000	4	2	21
TOTAL			138,839	174,100	723	415	1,503
Admitted to Present Production			140,000	180,000	1,100	400	1,750
			<i>Estimated</i>				

APPENDIX 2

PRESENT PRODUCTION

<u>FINE AWG</u>	<u>Sheep Herd</u>	<u>Wool Production</u>	<u>Sheep Sales</u>	<u>Beef Cattle Herd</u>	<u>Beef Sales</u>	<u>Dairy Cows</u>	<u>Dairy Sales</u>	<u>Gas Ass.</u>	<u>Gas Sales</u>	<u>Total</u>
140,000 @ \$20	180,000	1,890,000 @ 40c.	46,000 @ \$4	1,100	412 @ \$90	400	224 @ \$100	1,750	3,066 @ \$25	
82,800,000		8756,000	\$187,200		\$37,080		\$22,400		\$76,650	\$3,879,330

ESTIMATED PRODUCTION WITHOUT REGULATED WATER

167,000 @ \$25	187,000	1,963,500 @ 40c.	48,620 @ \$4	4,200	1,773 @ \$90	400	224 @ \$100	2,500	4,373 @ \$25	
84,175,000		8785,400	\$194,480		\$141,750		\$22,400		\$109,373	\$5,438,405

ESTIMATED PRODUCTION WHEN FULLY DEVELOPED AND WITH
ADEQUATE REGULATED WATER

200,000 @ \$25	375,000	3,927,500 @ 40c.	97,500 @ \$4	9,300	3,488 @ \$90	500	280 @ \$100	4,600	8,050 @ \$25	
85,000,000		81,875,000	\$390,000		\$831,920		\$28,000		\$301,250	\$7,506,170