THE NORTH COAST DEEP-SEA PORT.*

Some Agricultural Considerations.

(N.R. Wills and P. Vaidyanathan).

Almost from the first years of settlement, farmers on the Far North Coast of New South Wales have been interested in the development of a large-scale port somewhere between Coffs Harbour in the south and the Queensland State border on the north. To a large extent this interest has derived from the peculiar circumstances of settlement of this region in the 80's and subsequent decades. Access to the Tweed, Richmond and Clarence valleys was almost exclusively by way of the sea. There was no satisfactory land link with Sydney and prospective settlers made the journey by boat, entering the regions by way of the three main rivers. A much smaller number flowed in from southern Queensland and there was some movement down from New England, but on the whole the region was settled primarily from the sea. Similarly, trade connections with Sydney grew up around small river ports, and the timber of the region and, later, sugar and butter were moved to southern markets by small coastal steamers. A continuous rail link with Sydney along the coast was not established until 1932, by which time the far northern regions had developed a maritime outlook so far as trade was concerned and orientated themselves towards Brisbane rather than Sydney in their pattern of land communications. Relative isolation from the administrative and commercial capital - Sydney - has fostered a regional spirit on the Tweed, Richmond and Clarence; although market considerations and financial links with Sydney have tempered the enthusiasm for local autonomy to a considerable extent.

Desire for a deep-sea port on the Far North Coast has thus to be viewed against the historical background. In addition, the concentration of agricultural activity in the coastal regions - particularly of dairying - has heightened the productive importance of the regions. There is a feeling that the economic importance of the regions, coupled with their relative isolation from the rest of New South Wales, is sufficient justification for the development of a direct port link with oversea countries. The argument is strengthened by considering the productivity of the hinterland - New England and the North West Slopes. At present there is no direct rail link between the coast and the wheat/sheep-cattle belt. It is felt that were these export producing regions linked with the coast there would be a considerable increase in the oversea trade likely to be handled by the proposed port. Such arguments are usually strengthened by qualitative estimates of possible development in the interior regions. They are held to be under-developed at

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* A special committee appointed by the Premier of New South Wales is at present investigating the proposal to develop a deep sea port on the North Coast.

present, and capable of increased productivity through closer settlement and more intensive farming methods. Admittedly, many of these arguments have yet to be tested by scientific examination and hearsay replaced by undebatable fact; but the existence of potentialities in many interior regions is beyond question. Given favourable market conditions, they are regions of rising productivity for many agricultural products, a fact which must be held in mind when considering the development of a deep-sea port.

However, one fact more than any other seems to have retarded the scheme in the past. The coast of New South Wales, far from being well supplied with natural anchorages for large ships, is poorly off in that regard. Sydney has such a wide margin of superiority that concentration of the export trade at Sydney is as much the outcome of geography as of centralised administration. The North Coast is probably worse off than the regions further south. It has the misfortune to possess a mature coastline which has been filled up and smoothed out by river deposits. The only possibility for large ports are at the semi-estuarine mouths of the larger rivers; with open roadsteads protected by breakwaters as the only alternative. Royal Commissions have several times examined the North Coast for possible port sites, but have always returned restrained verdicts. Wherever the site, much money would have to be spent in excavating, diverting the stream and dredging, and it is open to question whether the result would be particularly satisfactory. None of the North Coast rivers are protected from the south-east like the Brisbane River, which has managed to become the chief port of Queensland.

Secondly, topographical difficulties between the coastal valleys and New England complicate the plan to link the coast with the interior by rail. Australia, on the whole, is not a land of rugged landscapes, but in certain areas topography has always been a barrier to easy communications. This is particularly true of eastern New South Wales, where there are only one or two easy routes linking the coast with the plateau and the interior slopes. So far as the North Coast is concerned it can be said that there are no well-graded routes leading up to New England. A railway would be both circuitous and steeply graded in its climb from the coast on to the plateau, no matter where the ascent were made. In the economics of transport, these facts are important and must be taken into account in any scheme to link the interior with the coast by rail.

Geographical Characteristics of the Four Regions of Richmond-Tweed, Clarence, New England and Namoi.

(a) Location.

The four regions, Richmond-Tweed, Clarence, New England and Namoi, are located in the north-eastern corner of New South Wales. They are contiguous regions, and together represent about one-sixth of the area of the State. Their combined territory lies

along a 370 mile east-west axis, and has an average width of about 150 miles. On the north they are bounded by the Queensland border as far as Mungindi; the western boundary follows the Darling (or Barwon) to a point about 20 miles east of Brewarrina, while on the south the boundary is a line following the southern watershed of the Namoi River onto the rugged south-eastern fringe of the New England Tableland. From there it proceeds north along the plateau's eastern edge before turning towards the coast north of the Macleay Valley. The combined regions are bounded by the sea on the east.

Richmond-Tweed and Clarence are essentially coastal regions; New England is a region of elevated plateau, in some parts very rugged and in others undulating to hilly only, while Namoi is essentially a region of flat plains. The last is the most extensive of the four.

(b) Topography.

The structural make-up of the four regions is, broadly speaking, characterised by parallel north-south trending belts. In the coastal regions river valleys and intervening offshoots of the plateau dominate the landscape. Rivers such as the Tweed, the Richmond, Clarence, Bellinger and the Nambucca have eroded valleys of varying sizes in the eastern fringe of the New England plateau. At places, such as Coffs Harbour, plateau spurs extend to the coast-line, in the latter case separating the coastal basins of the far north from those of the mid North Coast. As a rule flat land is confined to alluvial deposits along the lower reaches of the rivers and there is no continuous coastal plain.

West of the coastal ridge-and-valley zone is a high rugged belt of country extending north and south across the regions. It represents the eastern edge of the plateau and separates the coastal valleys from a more undulating terrain on the west. The latter provides a third topographical belt, and is roughly indicated by the route of the main northern railway. On its western side, this zone is flanked by a second belt of rugged though somewhat lower country, in which westward-flowing rivers, such as the Gwydir and the Namoi, have their headwaters. Its less dissected western side is usually referred to as the North Western Slopes. Towns, such as Inverell, Barraba, Manilla and Tamworth are located along this belt. Beyond the slopes is the area of the plains, which flank the Eastern Highlands throughout their entire length.

While there are minor divergencies from this generalised topographical pattern, it is none the less characteristic of the four regions. Topography has vitally influenced the direction of the main transport routes and largely determined the shape of the settlement pattern, both of which reflect the zonal arrangement of land-types described above.

(c) Climate.

Climatic conditions vary widely throughout the combined regions. As with topography, climatic regions are arranged in parallel north-south trending belts. The chief variant is rainfall which decreases from 70 inches at Byron Bay on the coast to 17 inches at Walgett on the Darling. Isohyets trend north-south across the regions, the 30 inch line roughly bisecting it. It is interesting to note how much of the well-watered (30 inches or more) eastern half of the combined region is hilly to rugged and of little use for agriculture. Except for the very limited alluvial flats along the coastal valleys, little of the eastern third of the combined region is suitable for cropping. From the agricultural standpoint the undulating New England plateau belt probably combines the climatic with the topographical optimum.

The incidence of frost is at its greatest on the plateau, where an average altitude of 3,000 feet has considerably modified the winter months of an otherwise warm temperate climate. Even so, frost is a permanent feature for only a short period during the mid-winter. The coastal belts are usually regarded as frost-free, but occasional frosts occur. The interior slopes and plains experience extremes of temperature in summer and winter, and frosts occur fairly frequently during cold spells. However, except on the plateau, frost is not a limiting factor for most agricultural crops.

The combined regions occur in the summer rainfall zone of eastern Australia. Actually they are on the southern fringe of it, and often come under the influence of the winter rain system, but usually the maximum falls of the year occur from October to April. The combined region thus tends to be a zone of summer cropping. Pastures reach their maximum growth during the summer months, which accordingly is the time of highest production in the dairy industry. Similarly, summer rainfall, combined with high temperatures, stimulates pasture growth on the slopes and plains of the west.

(d) Soils.

Soils vary widely throughout the regions. Geological or rock types have given rise to soil material which climate has further modified. In the eastern half of the region, soils are relatively immature and belong to the Podsol class (i.e., soils developed under humid conditions), but apart from this basic similarity there are wide variations in mineral content, colour, structure and potential fertility. Important sub-groups are: (i) the red and brown basalt derived soils of the Lismore-Kyogle district, of the Dorrigo plateau and the country around Guyra and Inverell, (ii) the granite derived sandy soils of much of the New England plateau, (iii) the river alluviums of the coastal valleys, (iv) clay and shale soils derived from silurian and mesozoic rocks (mainly on the coastal regions), (v) on the

western slopes, red brown earths and clay loams constitute an important soil group around Tamworth, Manilla, Barraba and Inverell, while further west (vi) heavy black clay soils have made the Liverpool and Namoi Plains a distinctive soil region. Finally, (vii) the brown soils of the Darling Plains represent material developed under dry climatic conditions. These latter are not podsols. It thus is apparent that the keynote of soil types in eastern Australia is diversity. However, little research has so far been done on the soils of the north-eastern part of New South Wales.

Sphere of Influence of the Deep-Sea Port.

Development of a deep-sea port on the North Coast is likely to influence agricultural production in the four regions. A direct railway link between Inverell and an east coast port is, of course, an essential adjunct to the development of such a port, as it will tap the large agricultural surpluses of the interior. In order to show the area which would be influenced by the port and the east-west railway, the New South Wales Railway Department has compiled a series of charts. These indicate the geographical size of the proposed port's hinterland, based on current freight rates; and in the table below is referred to as the "Freight Zone". The area covered by this zone is considerably smaller than the combined area of the four northern regions. On the basis of current freight rates it would be no cheaper for farmers in most of Namoi region, for instance, to consign to a north coast deep-sea port than to Newcastle or Sydney. Accordingly, a comparison of estimated exportable surplus production (interstate and overseas) between the Freight Zone and the four regions shows marked difference in available tonnage (see table below):

	THE FREIGHT ZONE			THE FOUR REGIONS		
	Available surplus production.	Export-able surplus (Inter-state & Overseas)	Value of export-able surplus *	Available surplus production.	Export-able surplus (Inter-state & Overseas)	Value of export-able surplus *
	tons	tons	£A	tons	tons	£A
Based on actual production	232,000	159,360	7,040,000	397,440	331,670	10,501,700
Based on potential production	470,920	313,300	9,306,000	705,110	558,000	12,981,400

* Based on the net value of production on the farm.

In this article it is assumed that the development of a deep-sea port on the North Coast and the lateral linking of Inverell with the coast by rail would be followed by a favourable 'to port' freight rate so as to tap the agricultural surpluses of the four regions.

'Available Surplus Production', in this article, refers to the estimated gross surplus production arrived at by deducting from the production of the four regions the estimated quantity that disappears locally. 'Exportable Surplus' denotes the estimated tonnage of a particular commodity that could enter interstate and oversea trade. In estimating 'exportable surplus' intrastate movements are taken into consideration.

Agricultural Importance of the Four Regions.

The importance of the four regions in the agricultural regimen of the State cannot be overemphasised. Possessing only 16% of the area of all holdings in the State, they are more intensely settled than the rest of the State, and employ a rural labour force of nearly 30% of the State. Total cropped area is over 20% of the State. The following table will bring out the importance of the four regions in the agricultural set-up of the State:

Crop and Farm Statistics 1943/44.

	Richmond-Tweed	Clarence	New England	Namoi	Total: 4 Regions	Total: N.S.W.	As % of State
No. of Agricultural Holdings.	6,743	3,901	4,832	4,443	19,919	73,074	27.3
Total Area of Holdings (acres)	1,755,987	2,469,330	9,915,909	13,306,697	27,447,923	171,877,572	16.0
Total Area under Crops (acres)	64,214	43,955	311,968	558,971	979,108	4,797,385	20.4
No. of Permanent Rural Workers	14,246	6,437	6,935	6,975	34,593	116,201	29.2

Richmond-Tweed and Clarence, the most intensely settled regions of the four, are dairying regions. Maize, sugar cane, bananas and vegetables are the predominant crops in those two regions. Cropping is of greater significance in New England and Namoi, where

grain, hay and vegetable crops are of major importance. The uncropped area of these two regions, except where it is too rugged, is used principally for grazing. High grade merino flocks, together with Corriedale, Leicester and crossbred sheep, are predominant while beef cattle are of secondary importance.

Richmond-Tweed, the smallest of the four regions, has the largest number of farms and permanent rural workers. The average size of holdings in Clarence is greater than in Richmond-Tweed and progressively much more so in New England and Namoi. This points to the fact - and it has been verified by investigation - that the potentiality for agricultural production is higher in the inland regions of Namoi and New England than in the Coastal regions.

Agricultural Production and Potentialities in the Four Regions.

Cereals.

The four regions, as a whole, are very important producers of cereal crops, especially wheat and maize. While the inland regions of Namoi and New England are big producers of wheat, the Coastal regions of Richmond-Tweed and Clarence along with New England are important for maize. Oats and barley are only of secondary importance and are confined mostly to the inland regions. Grain Sorghum, especially for feeding pigs, is gaining in importance in the Inverell district.

Wheat: Current and potential production of wheat along with available surplus production and exportable surplus is set out in the following table:

	Production	Available Surplus	Exportable Surplus *
	bushels	bushels	tons
Present position Average 1938/41	9,084,000	6,748,000	180,910
A forecast of Potentialities	25,000,000	13,500,000	361,600

* Includes intrastate movements which are impossible to determine.

Production of wheat in the northern regions is entirely confined to Namoi and New England with the former region predominating and is about 17% of the State's wheat crop. Even on the basis of present production it is estimated that wheat would form one of the most important exports from a quantity standpoint. The milling properties of northern wheat place a premium on its value and is greatly in demand within the State. This tends to complicate the

location of its market throughout eastern Australia. Nevertheless, the above estimate of exportable surplus is conservative.

Potential production is expected to be nearly three times present production, but the exportable surplus will be only double present estimate when allowance is made for increased use of wheat for feed for a growing livestock population. Expansion of wheat production is likely to occur mainly in the Western Slopes of the New England Plateau, particularly in the shires of Ashford, Macintyre and Gwydir, which have extensive basalt soils at present used for grazing. Further south, the opportunities for increased wheat acreage are less. Liverpool Plains includes considerable areas of good wheat land but there are limits to expansion of this cereal.

Maize: Maize is an important staple crop in the summer rainfall zones of north-eastern N.S.W. It is adaptable to a variety of soils and altitudes, thriving equally well on the highlands and in the coastal valleys. Current and potential production of maize is set out in the following table:

	Production	Available Surplus	Exportable Surplus
	bushels	bushels	tons
Present position Average 1938/41	2,062,000	1,655,200	10,940
A forecast of Potentialities	13,000,000	5,000,000	31,000

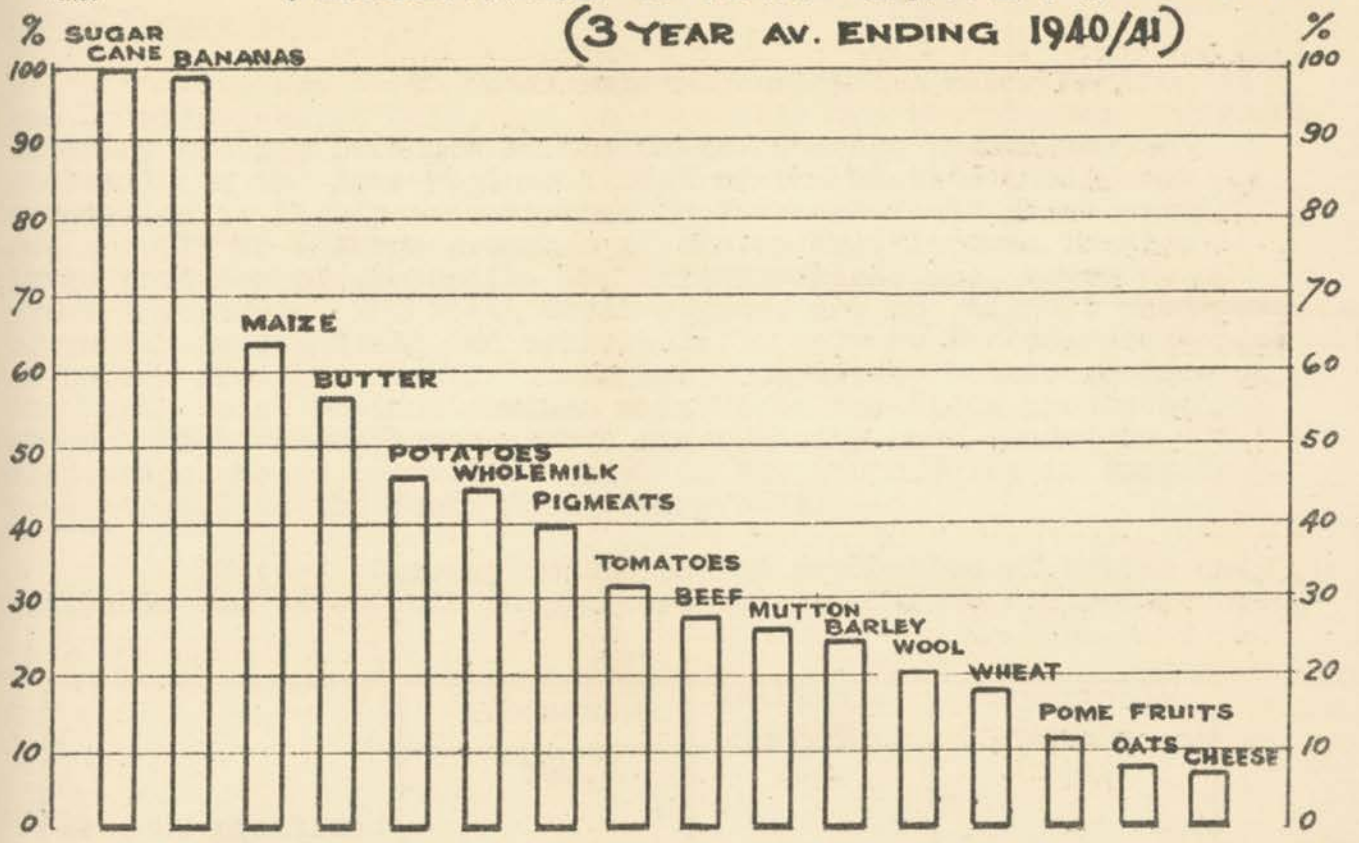
Current production of maize in the four regions is 63% of the State total. In recent years New England has been the largest producer of maize followed closely by Richmond-Tweed and Clarence. Production is most intensive in Richmond-Tweed. Exportable surplus based on actual production is not high. However, the importance of production of maize is in its influence on the production of dairy products and pigmeats.

Production of maize on the coast and highlands could be increased sixfold. On the Slopes maize comes in competition with grain sorghums, Japanese millet and wheat for the more favourable areas, and a diminished rainfall limits it to the districts east of Inverell and Barraba. A realisation of potentialities of maize on the scale envisaged will not only yield better results in dairying and hog raising, but will result in bigger surplus for interstate if not overseas export trade.

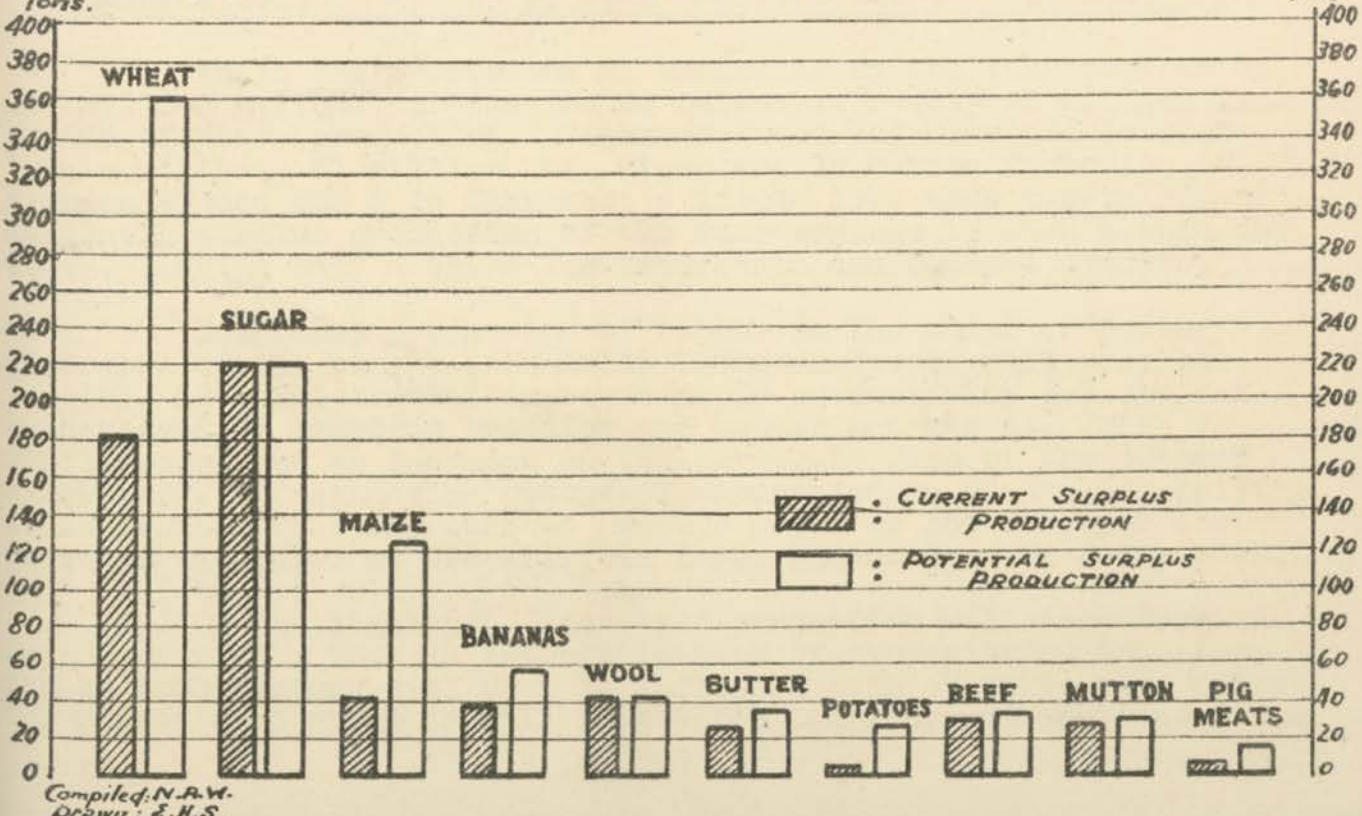
PRODUCTION IN THE FOUR REGIONS AS A PERCENTAGE OF TOTAL STATE PRODUCTION

P.45.2.
45.756

(3 YEAR AV. ENDING 1940/41)



ESTIMATED CURRENT AND POTENTIAL SURPLUS PRODUCTION FROM THE FOUR NORTHERN REGIONS



Compiled: N.R.M.
Drawn: E.H.S.

Dairy Products.

The two North Coast regions comprise a major portion of the Dairy-Hog-Maize belt, and consequently are the biggest producers of dairy and pig products in the State. Average production of wholemilk in the four regions is 44% of the State's total, but production is highly concentrated in Richmond-Tweed which stands out sharply as a large producer of wholemilk. Clarence is also a large producer of wholemilk. The inland regions are, however, of minor importance. The North Coast regions are the biggest producers of butter in the State and contribute largely to the oversea export of butter from the State. In marked contrast to butter production, the North Coast regions produce only 7% of the State production of cheese. High summer temperatures and humidity have tended to discourage cheese production which in New South Wales is largely concentrated on the South Coast dairy belt.

Butter: Current and potential production of butter and available and exportable surplus are set out in the following table:

	Production	Available Surplus	Exportable Surplus
	lbs.	lbs.	tons
Present position Average 1938/41	64,580,000	54,989,000	8,890
A forecast of Potentialities	96,000,000	82,000,000	13,200

While the production of wholemilk in the four regions is 137 million gallons, production of butter is nearly 65 million lbs. or 56% of State production. Richmond-Tweed and Clarence between them contribute 61 million lbs. There are 19 butter factories in Richmond-Tweed and 8 in Clarence. A little less than two-thirds of available surplus production of the four regions is used within the State, leaving only a third for interstate and oversea exports.

Increased production of butter in the chief producing districts of the north, especially Richmond-Tweed, will only be possible if a substantial improvement in productivity per cow can be achieved by improved breeding and better management. There is little scope for an increase in the aggregate size of the pre-war dairy herd. In estimating potential production on Coastal districts, it is assumed that the current average yield of 150 lbs. per cow could be increased to 225 lbs., in three generations of dairy cows.

On the highlands, increased production will come from an expansion rather than an intensification of the existing industry, though both factors will tend to influence each other to some extent. The region as a whole is well suited for dairying and could no doubt

increase the size of its herds and butter output by 100% in the next few years. The Slopes present only limited opportunities for further development. On the whole the two North Coast regions will continue to be the major producers of butter in New South Wales.

Meats.

Livestock numbers in the four regions are expected to contribute to a big exportable surplus of the principal kinds of meat. It is estimated that on present numbers alone exportable surplus tonnage of meat could be about 63,000 tons valued at £A2.7 million. The open grazing areas of the North Central Plains, the North Western Slopes and the Northern Tableland are important for sheep and beef cattle. Hog raising in the two Coastal regions is an important sideline to dairying, and on the mixed farms in the North Western Slopes it is proving a profitable sideline.

Estimates of production of meat in the four regions are based on the assumption that, along with the development of a deep sea port and the east-west link by rail, sufficient abattoirs and killing centres would be established in suitable areas to handle all the livestock now trucked on the hoof from the regions to Sydney and Newcastle.

Beef and Veal: Estimates of current and potential production of beef and veal are as follows -

	Production	Available Surplus	Exportable Surplus
	tons	tons	tons
Present position Average 1942/44	41,860	29,270	29,110
A forecast of Potentialities	52,200	33,300	33,000

Beef cattle in the four regions is about 27% of the State total. The region of New England is an important stud beef cattle breeding centre. The breeds comprise mainly Hereford and Aberdeen Angus with the former predominating. New England supplies most of the beef cattle to the Coastal regions of Richmond-Tweed and Clarence, where they are fattened. The region of Namoi also is noted for its stud Hereford and stud Shorthorns.

The potentiality for beef cattle in the four regions is limited. On the coast the limit of raising beef cattle has already been reached. Any increase in number is possible only in parts of New England and Namoi. Even here development of closer settlement will be a limiting factor, and the maximum increase is not expected to be over 30% of present numbers.

Mutton and Lamb: An estimate of current and potential production, together with the surpluses available, is set out below:

	Production	Available Surplus	Exportable Surplus
	tons	tons	tons
Present position Average 1942/44	38,210	28,640	28,640
A forecast of Potentialities	45,000	30,500	30,500

The four regions are responsible for 25% of the production of mutton and lamb in the State. Namoi and New England are important for sheep raising. At present about 70% of the sheep in the regions are merino, but it is common to see many flocks of crossbred sheep grazed for mutton. However, there are great possibilities for closer settlement in the North Western Slopes, and the consequent opportunity for the development of small mixed farms. Fat lamb raising on these mixed farms, notably in the shires of Macintyre, Gwydir, Gostwyck, Barraba, Mandowa, Cockburn, Peel and Nundle, is expected to become very profitable especially with the rail connection between Inverell and the Coast. The Inverell district is considered to be particularly suitable for fat lamb raising. On a mixed farm of 800 acres, 500 breeding ewes could be maintained and 500 lambs could be raised every year. Climatic considerations will prevent Northern Tableland becoming a fat lamb raising country. Part of the Northern Tableland with the North Central Plain will continue to be merino country. However, the effect of change in the type of farming in the North Western Slopes is expected to reverse the present proportion of merino to crossbred in the New England Region.

Pig Meats: Hog numbers in the four regions are nearly half of the State total. Estimates of current and potential production of Bacon and Ham and Pork are as follow -

	BACON AND HAM			PORK		
	Production	Available Surplus	Exportable Surplus	Production	Available Surplus	Exportable Surplus
	tons	tons	tons	tons	tons	tons
Present position Average 1942/44	3,180	1,920	-	5,840	5,210	5,210
A forecast of Potentialities	10,000	8,110	1,500	8,200	7,300	7,300

Production of bacon and ham is mainly concentrated in the two coastal regions, where it forms an important sideline to dairying. The inland regions are responsible for a big net surplus production of porkers in the State.

There is considerable scope for an increase in hog numbers throughout the northern regions of the State. Districts with the greatest potentiality are to be found throughout the wheat belt of the North Western Slopes, where mixed farms are developing. In the Inverell district on a mixed farm of 800 acres, between ten to thirty sows could be run economically. It is maintained that production of pigmeats could be trebled in the grain belt if full advantage were taken of the capacity of the region to produce suitable and abundant fodders. Facilities for killing which are limited at present will have to be expanded to meet increased local production of hogs. New England also has further possibilities as a hog raising district. An expansion of dairying coupled with adequate local supplies of maize would constitute the basis for such increase. In the coastal regions a long-term increase in hog numbers is closely bound up with the more fundamental problem of higher milk yield through more intensive dairying. On the whole the possibilities for expansion are less than on the Highlands and Slopes to the west.

Wool.

The regions of New England and Namoi are the biggest wool producing centres of the State. Current and potential production of wool in the four regions is as follows:

	Production	Available Surplus	Exportable Surplus *
	lbs.	lbs.	tons
Present position Average 1938/41	99,009,000	99,009,000	44,200
A forecast of Potentialities	99,009,000	99,009,000	44,200

* Includes intrastate movements which are impossible to determine.

The Northern Tableland and the North Western Slopes produce wool of super style quality and high spinning properties. Exceptionally high priced wool of the Commonwealth comes from the New England region. As there are no woollen mills in the four regions, the entire production is considered to be exportable surplus for intrastate, interstate and oversea markets.

It may be considered that the limit of wool production is reached in the northern regions. Possibilities of closer settlement on the North Western Slopes along with the increase in area under improved pasture is likely to result in the reduction of pure merinos. In fact, the proportion of merino to crossbred, which is 70 to 30, is likely to reverse with the development of mixed farms and fat lamb raising. The Corriedale-Merino grade stock, which gives the small flock owner a better carcase than other sheep and bulky fleece, is becoming popular in mixed farming areas and areas under improved pastures. Though the quantity of wool produced may not decrease as a result of the emphasis placed on crossbreeding and fat lamb raising, the type of wool produced and its value will depreciate.

Fruits.

Tropical fruits, like bananas, in the Coastal regions of Richmond-Tweed and Clarence, are the only fruits of any importance in the four regions. The Armidale-Uralla district in New England has very favourable conditions for the development of pome fruits, and production could be increased ten times current production if favourable market conditions prevail. However, any increase in production of tree fruits other than tropical fruits will be absorbed by the four regions and the rest of the State. Only in the case of bananas is there an exportable surplus which enters interstate trade. The position of bananas is set out in the following table:

Bananas.

	Production	Available Surplus	Exportable Surplus
	lbs.	lbs.	tons
Present position Average 1938/41	93,046,000	87,046,000	23,770
A forecast of Potentialities	140,000,000	131,000,000	35,700

The North Coast regions, where suitable climatic conditions prevail for banana plantations, are the biggest producers of bananas in Australia. The industry is located in four main producing districts. The most northerly includes the hills of the Lower Tweed between Murwillumbah and the coast. The second zone takes in the coastal basins between Burringbar and Ballina, while the hills around Lismore constitute a third producing zone. The fourth district is separated from the plantations of Richmond-Tweed by the valley of the Clarence. It includes the hilly to steep coastal hills stretching from Woolgoolga through Coffs Harbour to Nambucca. Any expansion in banana growing in New South Wales may be expected to occur within these four zones. It is estimated that current acreages could probably be doubled in the event of an increase in Australian demand.

Method of transport for marketing bananas has varied in recent years. The railways have largely taken over the inter- as well as the intrastate trade from interstate shipping lines. It is therefore uncertain to what extent port facilities will be required to cope with future banana movements between the Australian States.

Important Commodities with no Exportable Surplus.

There is a big surplus production of sugar cane and potatoes in the northern regions, but it is hardly sufficient to meet the requirements of the State.

Sugar cane production in New South Wales is limited entirely to the two coastal regions of Richmond-Tweed and Clarence. Average production of sugar cane between 1938/41 has been 318,000 tons. In the past coastal shipping has supplied the link between the canefields of Richmond-Tweed and Clarence and the sugar refinery at Pyrmont, Sydney. It is very unlikely that a North Coast deep-sea port would be used for the shipment of crude sugar to overseas or interstate refineries, but coastal shipping trade will continue to handle crude sugar and its by-products. Moreover, a "gentleman's agreement" between New South Wales and Queensland renders further expansion of sugar production in this State unlikely.

Production of potatoes in the four regions is nearly 20,000 tons or 46% of State production. New England has the largest production with well over half the total for the four regions, while the coastal regions contribute the other half. Production in Namoi is insignificant. Like crude sugar, potatoes may continue to be handled by coastal ships for intrastate movements. It is possible to increase production of potatoes in the northern regions by two and a half times, but it will hardly meet the requirements of the State. Increased production on this scale can be achieved only by opening new potato growing areas. The basalt pockets of eastern New England probably have the highest potential.

The Vegetable Industry.

The coastal basins, the New England Plateau and the eastern part of the Slopes are physically well suited for the production of a wide variety of vegetable crops, like tomatoes, peas, beans and root crops. From the resource point of view opportunities for further development are abundant, but expansion will be possible only if market conditions become favourable. Distance from markets more than the physical resources of the regions is the determining factor for the expansion of the vegetable industry.

However, canning beans may prove a notable exception. The industry, which is almost entirely a war-time development, has become concentrated in the Armidale, Guyra and Glen Innes districts. In the 1944/45 season about 10,000 acres of beans were sown and the current harvest is expected to reach 50,000 bushels. Before the war Australia imported its beans for canning chiefly from Japan and the U.S.A., but the amounts were very small. However, it has been estimated that New England growers should be able to compete effectively with overseas producers. New England offers bean growers optimum conditions of soil and climate. Nevertheless, potential development of the industry is closely linked with post-war market prospects. In the event of canning beans assuming a permanent place in the agricultural economy, rail and port facilities may well influence marketing costs of New England growers and processors. The potential surplus of canning beans in the area is expected to amount to 1,000 tons.

Conclusion.

The structural make-up of the four regions, wide variations of climatic conditions and diversity of soil types enable the four regions to produce a diversity of crops within their borders. In fact, the four regions occupy a dominant position in the agricultural economy of the State. Better transport facilities and favourable market prospects for agricultural products are likely to influence the development of these regions, and thus enable them to contribute markedly towards the prosperity of the State.