

TROPICAL GRASSLAND AGRICULTURE AND THE GREEN PAPER ON RURAL POLICY IN AUSTRALIA—A RESUME

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ABSTRACT

Three periods are defined for the almost 200 years of agricultural history in Australia. These are firstly "The period of exploitation", when the emerging pastoral industries exploited the natural resources of grassland and woodland in establishing the sheep and cattle industries. Secondly came "The period of agricultural improvement", when an emerging agricultural technology resulted in improvements in pastures, soils, animal production and crops and counteracted soil erosion and declining yields. Economically, agriculture was vital to the Australian economy but violent fluctuations in the level and value of production brought about large balance of payment problems. A protected industrialization was developing at this time. Thirdly "The period of agricultural consolidation" is presaged wherein agriculture takes its place along with secondary industry, services and tourism. The deliberations of the Green Paper and their implications for tropical grassland agriculture are discussed.

THE HISTORY OF AGRICULTURAL DEVELOPMENT

In attempting to discuss the Green Paper on Rural Policy in Australia it is necessary to look back at the history of agricultural development of this country which has been well documented by Shaw (1967). As I see it there are three distinctive periods in the nearly 200 years of agriculture. These are 1) the period of agricultural exploitation 2) the period of agricultural improvement 3) the period of agricultural consolidation.

1. *The period of exploitation* covered the first 120 years of agricultural development in Australia. From the earliest beginnings of farming in the very amateur hands of Governor Philip, the greater part of the period was occupied by exploration and subsequent settlement. At first this was largely associated with sheep and later on cattle grazing but there were severe transportation and marketing difficulties. The gradual extension of the railways opened up areas for wheat farming, the great clipper races to Britain improved communications and markets, then came refrigeration which opened up a vast new market for meat, instead of only wool, hides and tallow, and dairy produce (butter and cheese). Along with these came such technological developments as the stump jump plough, the seed stripper followed by the reaper and binder, the milking machine and the shearing machine.

Over this period almost no heed had been given to such things as declining soil fertility and structure or pasture stability. Almost the whole aspect of agriculture was directed at exploiting the resources of pasture land and soil which existed naturally. On the pastoral scene the only efforts at improving on what nature provided were directed at increasing subdivision and providing extra watering points to improve the overall utilization of the native pastures, at removing or thinning the trees of the woodlands and open forests by ringbarking to stimulate better grass growth or, as in the case of clearing the heavy forests and "great scrubs", at encouraging grasses where none existed naturally before. The introduction of *Paspalum dilatatum* into the northern scrubland clearing was probably the first example of plant introduction in the tropics.

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By the turn of the century a rather sorry picture had emerged. The 1890's had been a 10-year economic depression, vast areas were showing serious pasture degradation due to overgrazing and the effects of drought and rabbits, wheat yields had declined by about 50% and large areas of the mallee and other lands in Victoria, South Australia and New South Wales were becoming badly eroded by wind and water. Furthermore there was very little more new land to exploit. However, by this stage the overall patterns of agriculture had been set for most of Australia.

The impact of this period of exploitation was mostly felt in the southern temperate parts of Australia, partly because the process had been longer than in the more remote tropical areas and partly because the tropical areas could not be exploited in the same way. The wet summers and dry winters of the tropics provide a very different situation to that of the temperate regions where the reverse is by and large the case. Except in the arid and semi-arid interior it is very difficult to overgraze tropical grazing lands.

2. *The period of agricultural improvement* is generally considered to have dawned with the Act of Federation of the Commonwealth of Australia in 1901 (Donald 1967). This act paved the way for the removal of interstate tariff barriers, which had operated as significant economic obstacles. At this time the economic depression of the 1890's began to ease and people began to consider the possibilities for intensification of production.

The work of Gilbert and Lawes at Rothamstead, which led to a new understanding of plant and soil husbandry and the use of fertilizers, was becoming known in Australia through the developing Departments of Agriculture and Agricultural Colleges. The realization by Farrar of the production increases that could be achieved by breeding better adapted wheats, the availability of the new chemical fertilizer superphosphate, and the realization of the value of Howard's clover (subterranean clover) as a pasture legume all helped to precipitate this important period. The result of this was the establishment of agricultural research on a firm footing with the formation in 1910 of the first faculty of Agriculture in Sydney, the Waite Research Institute in 1925 and C.S.I.R. in 1926.

The flowering of agricultural research in the south led to the solution of a great many of the problems left as a legacy of the previous century. Soil fertility trends were reversed, animal and crop yields increased, soil erosion stemmed and the frontiers of agriculture thrown back almost unbelievably as soil mineral deficiency problems were solved and integrated, pasture-crop management systems evolved. This was truly a green revolution given direction and understanding by such people as Trumble, Davies and later Donald.

Meanwhile the northern tropical regions of Australia slumbered on and it was really not until the height of the flowering of agricultural research in the south that the seeds of the new technology were transplanted to Queensland, most notably by Davies. Here was a magnificent new challenge; an almost totally new environment, a range of species almost unknown to western agriculture or not even yet explored. To be sure, some work had been done by the State Department of Agriculture and Stock but mostly in the wet tropical and sub-tropical coastal areas with a handful of grasses and legumes in restricted use.

This was an age of confidence in the new technology which had proved so successful and sound in the south. On this basis brave predictions could be made as to the limits of pastoral production in Australia (Davies and Eyles 1965). It was a matter of multiplying the technology by the area predicted as suitable and there was the answer. It was out of this era of buoyant expectancy that the Tropical Grassland Society of Australia was born eleven years ago, and I think, well has it achieved the hopes of those who originally conceived it.

Perhaps the most important aspect of this era of improvement which the Green Paper discusses has been the continuing pre-eminence of the rural sector in the Australian economy. As such, expansion in this sector largely determined expansion in the economy as a whole and the level of overseas spending which the balance would allow. Due to the very large fluctuations in production which traditionally characterize agriculture, so there were large fluctuations in the balance of payments situation and these have been the main pre-occupation of government economic policy. Governments therefore acted to assist exports, to stimulate agricultural production by bounties, tax concessions etc., and to stimulate import replacement industries by means of tariffs. During this period exchange rates were fixed, tied to either sterling or the U.S. dollar. There were also preferred and often long-term trade agreements with the U.K.

One of the less desirable effects of promoting increased farm productivity is that this also promotes much greater production variability on a farm basis. While pasture improvement has generally made the farm more resilient to the effects of drought through the better quality of the pastures and their greater responsiveness to small falls of rain, the farmers' income fluctuations are greater. The result of this in recent years has been an increasingly diverse farm enterprise, though farm size and capitalization exert a strong control over the options available.

A further problem stems from the greater degree of capital intensiveness of farms in response to economies of labour and the greater dependence on purchased inputs (seed, fertilizer, chemicals, processing of farm products, services etc.). The farm unit is being equated more and more with the non rural sector and therefore competing in that area for goods and services. The unimproved and conservatively stocked spear grass property appears more and more of a luxury!

The Green Paper gives an extensive discussion of how governments have or should administer controls or stimuli to the rural sector in an attempt to normalize some of the more unusual factors exclusive to it. Perhaps the most significant difference of the rural sector from any other is the widely fluctuating pattern of production due to the overriding climatic controls on production. Not only does this cause significant shifts in supply and demand and the consequent variability in farmers' incomes, it also affects services and supplies to farmers. On the international scene there exists a similar situation so that market demand is fluctuating violently and unpredictably. While it is true to say that this may more or less balance out on a world basis there are severe marketing problems associated with this. The main areas for government intervention, therefore, are in farm income and tax stabilization, price stabilization, disaster compensation, opportunity equalization, marketing assistance and research. One of the most important and continuing areas of government assistance to the agricultural industry has been the research support given both at Federal and State level. The industry itself has also recognized this and given strong support to agricultural programs from industry funds. In fact this industry support far exceeds that provided in any other sector. In this respect it may seem that agriculture attracts a disproportionate share of research money in relation to its place in the economy today but a recent OECD Report (1974) indicates that Australia's expenditure in this area is only average for developed western countries but its research support in the industrial sector is considerably below average. They do not recommend therefore any robbing Peter to pay Paul.

There is a further important consideration for supporting continued agricultural research which lies in the fact that agriculture is a primary renewable resource. As the Green Paper points out, the extent to which it is renewable depends on management, which if it is to be continually updated, requires research. Furthermore the continuous adaptation of agriculture to changing markets and to rising costs of inputs

similarly demands research. Lastly, agricultural research, in being strongly environmentally oriented, has an important bearing on our increasing concern for environmental issues and for understanding their problems.

3. *The period of agricultural consolidation* is just beginning. I have called it this because we are witnessing the agricultural sector being consolidated into a framework of a much more balanced economy. The realization of this new situation has in part brought about the significant changes in economic policy that are besetting us today. These changes are inevitable, only the rate at which they occur being political. The Green Paper provides an analysis and set of guidelines on rural policy of great significance. It is the first such comprehensive review for more than 30 years and the industry is indeed fortunate to have such an eminent panel of men commissioned to produce it.

Over the last 10 years we have witnessed an unprecedented boom in mineral exports. Furthermore, since the second world war there has been a rising contribution from exports of manufactured goods. In relative terms the overall contribution from rural exports has declined from 75% to 50% of the total. This has tended to have a buffering effect on the economy in that the recurrent balance of payments problems, which were associated with an agriculturally based economy, have been somewhat alleviated. Because of the much healthier position of the industrial sector and its greater ability to survive under lower levels of protection than in the past, it is possible to overcome economic fluctuations more by using flexible exchange rates than by the use of tariffs. Over the last two years the high prices obtained for both rural and mineral exports brought about export earnings considerably in excess of imports, resulting in a hardening of the currency. Conversely, recent downturns in the rural sector coupled with a high rate of imports, brought about a weakening of currency. Overall the gains and losses caused by currency fluctuations usually average themselves out over time, provided one sector is not booming when another is strongly depressed.

One of the important outcomes of this situation, where exchange rates are changing continually on the world market, is the increased sophistication needed for letting contracts and using forward exchange markets. The Paper suggests it will be necessary to have advice available to small groups who are not serviced by the expertise usually available to producer and company Boards. There is a case for providing some compensation in special cases of hardship but the Paper does not support this on a large scale. While the rural sector remains a very important one in terms of export revenues it may not be given the same level of consideration that it has in the past and for this reason it would seem desirable to incorporate a greater diversity of product as a stabilizing factor.

The Paper pays a good deal of attention to the "market" which it considers should operate as freely as possible. However, it is necessary for government to exercise some control over this because of its role in overseas marketing, in maintaining consistency with its trade policies, and for the increasing requirement of overseas market intelligence. There is also a need for some intervention by government on the home market, either for its improved operation or because of inequalities of its operation in relation to other sectors. Thus intervention may be motivated towards increasing efficiency and/or safeguarding welfare. However, these two are more often than not incompatible, for measures aimed at increasing efficiency often decrease welfare and vice versa. Any intervention therefore should attempt to attack these problems directly rather than through the market. Since the market provides the best economic signals for the producer, any interference in price policies, which distort or conceal these signals, should be avoided. Because the agricultural sector has for so long been the most important one in the economy, there still exists a considerable feeling that it should continue to be assisted in a great many ways that may no longer

have any real justification from a national point of view. It is very necessary for the industry to become economically integrated into the more sophisticated national economy but there are new instruments for making known the problems of the rural sector such as the Industries Assistance Commission, this Green Paper and so on.

The structure of the farm business unit is rather different from the most usual form in commerce or secondary industry. Firstly although public company ownership has been a feature in some areas of the industry for almost as long as its existence, the majority of farms are based on private ownership, either individual, partnership or private family company. That this situation has not changed greatly over a long period of changing agricultural climates, the Green Paper considers, is a good measure of the resilience of the family farm and its likelihood of surviving for the foreseeable future. The circumstances contributing to this are rather unique to the industry which requires that certain special provisions may have to be made in such areas as probate or estate tax. With inflation and rising land values the capital values of agricultural business units are becoming quite considerable and out of proportion with comparable businesses in other sectors. The viability of such units can increasingly be thrown into jeopardy by unwise planning for its succession. Generally speaking it is the more wealthy enterprise that can plan this best.

WELFARE OF RURAL AREAS

The Green Paper repeatedly returns to discussions of welfare in the rural sector. It indicates an awareness of problems that are peculiar to this sector and while there is, rightfully, considerable emphasis placed on promoting increased efficiency this is always conditioned by considerations of welfare. The paper draws attention to the fact that as farm incomes fluctuate or follow a long term downward trend the first people to suffer are the farm labour force and the small town people. Often farm labour is not in a position to relocate itself elsewhere in the industry or redeploy itself in rural centres, in which case it is lost permanently. Furthermore such labour often has a very limited choice of occupation once it has moved away. The paper shows a disproportionate amount of poverty in small country centres as compared with metropolitan centres and this has consequences in the overall aim of providing equality of opportunity throughout the population. Obviously such important areas as education, even if it may be provided, may not be equally accepted. Although there are retraining schemes in existence for farmers who have left the industry and for other rural labour these have not been extensively used for various reasons.

It seems this is all part and parcel of the greater problem of rural reconstruction and we have yet to approach this in a truly integrated way. While it is fairly true to say that a healthy agricultural sector leads to a healthy rural service sector it does not necessarily follow that by giving attention to the first, the second will always follow. Rural reconstruction measures have largely been implemented this way so far but there is a need to look carefully at the factors governing the whole rural community with representatives from each sector of that community assisting in the planning. Quite dramatic results have been achieved in Swiss mountain rural communities by such integrated planning in recent years. Adult education, training schools and retraining programs have also played an important role.

The Paper is critical of the organization of agricultural education in Australia. There are a large range of educational institutions which are generally not well coordinated and as a consequence Australia lags behind most developed countries in the proportion of its rural work force with formal agricultural training. The extra funds made available for tertiary institutes has caused some improvement in this respect. Not only are studies in applied fields more available but the institutes themselves are being located in the larger rural centres and therefore in a position to play a community role which is already becoming apparent. Notwithstanding this I feel one of the biggest misfortunes of rural education in Australia has been the divorcing of the

agricultural faculties from the Agricultural colleges and their isolation in metropolitan based universities. By this the rural community has been denied much of the spin-off from a fully integrated range of rurally oriented education that we see in the U.S.A., New Zealand, much of Europe and the U.K. It is and will be of the utmost importance for the rural community to be better educated, not only to reduce the widening cultural gap between urban and rural populations, but also to meet the challenge of taking a greater part in speaking for their own community and its problems. There is also an important role to be played in providing feed-back for rural education, extension and research.

CONCLUSIONS

What does the Green Paper point to in terms of the future of the grazing industry and the future activities of this Society? As I have already indicated we are entering a period of consolidation and it is to this we must direct our attention. There are three areas in which this consolidation is or will occur, *viz.*:

- *economic*
- *welfare*
- *conservation and multiple use of natural resources*

ECONOMIC

The importance of the rural sector in the national economy can be expected to decline still further and may, before long, stand at one third of the total. We can expect further expansion in the industrial, mining and service sectors particularly as the secondary technology associated with the processing of minerals develops. Furthermore the demand for services associated with an increasingly sophisticated society, increased leisure and tourist activity will give a tremendous impetus to that sector. Policies relating to one sector are not likely to be considered without reference to the effects on the other sectors.

The expert opinion of the Green Paper is that the rural industries should operate in a free market so that much of the protection traditionally afforded the industry is not continued. However there are special considerations required to be directed at the problem of income and tax stability and successional problems related to the increasing capital cost of land. There are ways of making internal adjustments to meet these problems, the most significant of which is the diversification of output. To be sure this is not always possible but perhaps it is more possible than many people think. In terms of consumer interests this is very relevant because, as society becomes more sophisticated, so their demands for an increasingly wide range of food and raw materials increases, even though the quantity demanded increases only slightly. These are required at reasonable and relatively stable prices. Consumers also require information on what is available, its quality, price and control of misinformation, particularly as this concerns substitutes (which should be controlled by labelling only).

Because of the increasing use of services and products of industry in production, distribution and processing, the rural industry is becoming less isolated from the rest of the economy. However, as mentioned earlier the farm business units themselves are usually small and rather isolated and there is a need for more organized marketing and trading groups such as co-operatives. The Green Paper, in fact, suggests that the relevant groups further develop these forms of organization to strengthen their marketing and trading positions. Such organizations, either individually or collectively, provide a better basis for dialogue with government or producer boards in the larger area of agricultural policy and market research.

Pasture improvement is likely to lead indirectly to greater economic stability in spite of the short term effects of increasing income fluctuation and probably also in spite of the present unfortunate situation in the beef industry. As we have seen from southern agriculture, pasture improvement can lead to increased diversification into

cropping with crop-pasture sequences as a result of the enhanced soil fertility and stability resulting from intensified pasture management.

There is no doubt that Australia will continue to be a major producer of food for world markets and there is every indication that the demand will increase in the future. However, the markets are likely to remain for the present almost solely in the traditional areas of the well-fed, affluent markets. The future demands will come from the less economically fortunate. This is an area where traditional economics does not function adequately. The problem of marketing food to the undersupplied nations is the most important that world agriculture faces today and for the future. This is a national problem which transcends domestic economics, but it will ultimately strongly influence the industry as it will the rest of us.

WELFARE

As the affluence of society grows so too does the consideration for the welfare of people, and so too do the opportunities for significant differences between groups to develop. The rural community is at a disadvantage to other communities in several respects *viz.* in terms of distance and isolation from markets and sources of supply, in their lower level of economic organization and hence bargaining capacity, which is partly related to more difficult communication, and in some areas of education and culture. Perhaps the most disadvantageous situation relates to the unusually large fluctuations in income, and further related to this, demand. Also from a marketing point of view, the primary producer is the last in the line, not the first. All the costs are traditionally handed down the line from the consumer.

Welfare is a difficult area to attempt to equilibrate. As we have discussed earlier, welfare and efficiency are so often linked and welfare measures can be easily misdirected to the most efficient producers who least require it. However, the most efficient area of directing welfare appears to be in stabilizing incomes. Within the grazing industry there exist stabilizing schemes in dairying and wool production but not in meat production. The recent disastrous drop in beef prices, not envisaged even by a recent B.A.E. survey, is indicative of what can happen and provides a case for considering stabilization measures. The ramifications of such measures are extensively considered in the Green Paper.

It is unlikely that primary producers will be able to take on more of the role of price setters, rather than price getters, until some measure of stability is able to be achieved. There is an important area of market research which must be pursued before this is achieved *i.e.* producer to consumer, both domestic and export.

The sociological problems of rural communities have not yet attracted very much attention. These embrace the broader problems of education, cultural activities, wealth distribution, social status and occupation and are strongly influenced by community size and type of farm enterprise. These latter two have such an overriding effect on the community that any analysis of the problems must be based on a region-wide analysis. The aim of any overall policy should be equality of social and economic opportunities but it is likely that some government assistance in this area would be required. This would have the effect of increasing employment opportunities as part of an overall decentralization plan.

CONSERVATION AND MULTIPLE USE OF RESOURCES

In the last few years there has been an increased questioning of the impact various industries are having on our environment. This has been brought about by a number of factors, not the least of which is the increasing scarcity of land for more than just the traditional uses. The increasingly urbanized population is looking for recreational outlets for its greater leisure time. The community is more aware of all forms of pollution of air, land and water because it is beginning to suffer from their effects. Furthermore, the urban population is more remote from the rural scene than ever before. At the same time as polluting its own environment (though there are

some signs it is beginning to do something about this) it is questioning, on the grounds of potential pollution, the widespread use of artificial fertilizers, pesticides and the disposal of animal residues. Thus it is necessary for the industry to use or manage these things wisely, and at the same time encourage research into their side effects, efficiency of use and understanding for their use.

In general the agricultural lands are reasonably well cared for. The disasters of the past have by and large been taken in hand. The result is a considerable number of governmental and semi-governmental departments or agencies controlling land use. This has both advantages and disadvantages. The advantages are well known e.g. soil conservation, agricultural advisory services, irrigation and water supply advice and land assessment. The disadvantages lie in the inflexibility against change that so many agencies bring about when demands for different forms or multiple forms of land use develop. The agricultural industry must recognise the validity of these demands and attempt to have them accommodated by opening the way to sensible integration of different land uses. Such integration may lead in some cases to increased stability of the enterprise e.g. farming and recreation, forestry and grazing, farming and wild life preservation, farming and landscape architecture (see Coal-drake, 1974). If not directly profitable there are intangible benefits aesthetically and in terms of public relations.

Landscape architecture may appear at first sight to be an obscure area of concern or profit. However, primary producers, particularly graziers, now have the capacity to destroy vast areas of natural landscape rapidly and cheaply, either by heavy machinery or through the use of arboricides. More than ever before they have the capacity to fashion the aspect of our landscape. As the pressures of urban development increase, so the aesthetic aspects of our rural landscape become more cherished and contribute more to the quality of life. Primary producers are the most important managers of this resource, and so it should largely remain, for to replace them with alternative managers would be quite irrational in the absence of an alternative use. For much of the sub-humid and semi-arid regions of Australia the most efficient form of land management is based on grazing ruminants. If these industries are to decline to uneconomic levels the caretakership of these lands then becomes a charge on the community if no other "profitable" use exists.

In conclusion I think we can envisage quite considerable changes in the rural industry in the years to come, firstly as the industry stabilizes and consolidates to its new position in a rather new type of national economy. Secondly, the industry must face the economic problems of Australia consolidating itself into a new type of world where resources are increasingly in demand and of more and more limited supply.

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