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The Importance of Agriculture: what hope for agriculture, and what needs doing?

A. G. Lloyd*

In recent years both incomes and morale have slumped in Australian agriculture. This has happened before, and today's pessimism is just as excessive as previously. There are *exaggerated fears* that agriculture has no future. Equally, there are some *exaggerated hopes*, as to the extent to which we can rapidly and effectively restructure the economy away from agriculture, and restructure agriculture away from the "broadacre industries". The key words, with regard to the latter objective, are *value added*, *high-tech* (sunrise) and *infant industries*, and *better marketing*.

By contrast, the conclusion suggested in this paper is that traditional broadacre agriculture will remain, for decades, vitally important in reducing the balance of payments deficit which is our major economic problem. Before considering these issues we should be clear about the nature of the farm problem, and this requires us to view it in an historical setting.

1. Background¹

Except where heavily protected, farmers have been "losing relativity" almost world-wide for at least six decades—*i.e.* their incomes have fallen relative to other occupations. This long-term downward trend is associated with *economic growth*, and seems inevitable (unless offset by large subsidies).

The technological progress which is the mainspring of economic growth expands the economy's capacity to produce food more than the capacity to consume. This occurs because as a community gets richer the pattern of demand changes away from necessities such as food, and resources move increasingly towards secondary and tertiary industry. In a market economy, these forces trigger a cost-price squeeze on agriculture, so that resources (especially labour) are both forced out and induced out. This is no new threat: it has been happening, world-wide, *ever since the Industrial Revolution*.

In countries which export most of their output, like Australia and New Zealand, the problem is even worse. This is so because many countries (especially Japan and the EEC nations) protect their farmers from the "farm problem" with large subsidies which further depress the prices

Australasian farmers receive. They do this by restricting our access to their markets, and by dumping their agricultural surpluses on world markets.

The accompanying graph, taken from Lloyd (1986), shows the ratio of average weekly farm income (AWFI) to the average income of wage and salary earners (AWE) over the past three decades. In the mid-1950s farm income was more than double the income of wage and salary earners. By the mid-1980s the trend line suggests that the margin above AWE has fallen to about 25 per cent in a normal year, and the 1985–86 ratio was well below normal.

2. Exaggerated Fears

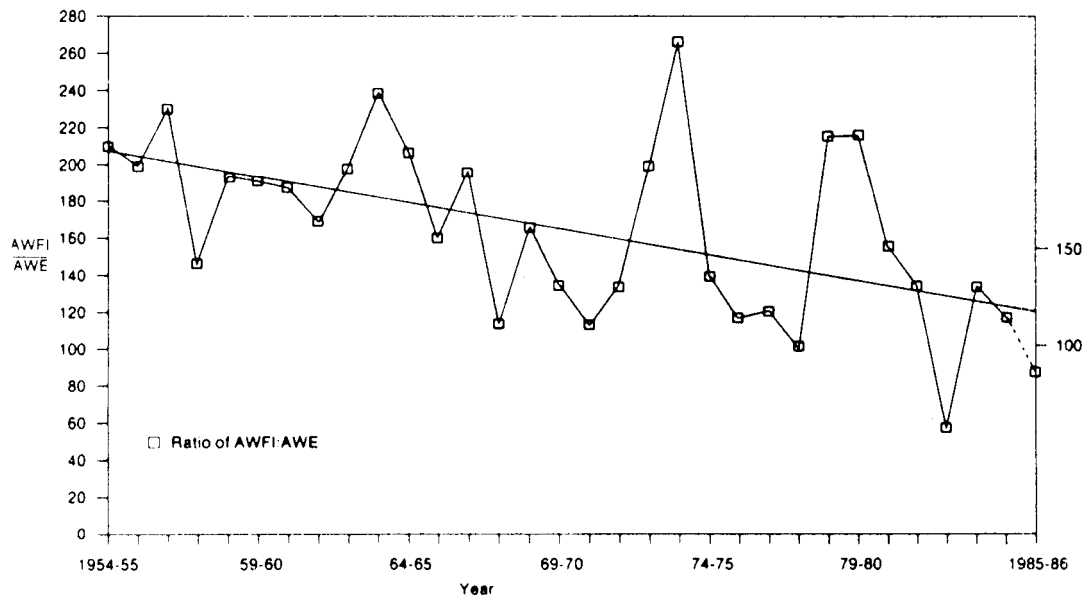
Having thus summarised the situation, Lloyd (1986) emphasised that the above outline must be heavily qualified, since it leaves far too gloomy an impression, for the following reasons:

- (i) Although there seems no good reason to believe that the long-term trend against agriculture will go away, it must be stressed that there are short-term booms and slumps about that trend, and much of the current slump is temporary. Almost certainly we will move back "above trend", as we have in the past, *i.e.* *part* of our current terms-of-trade problem will go away. (This has since happened.)
- (ii) While *relative* farm income has fallen, and while farm production has fallen *relative* to gross national product, both farm income (real) and farm output have risen in *absolute* terms. In fact, farm output has doubled in the past 30 years and output per man and per hectare has increased much faster, largely as

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¹ This summary is taken from the Rural Economics Study on Victorian agriculture commissioned by the Victorian Government (Lloyd 1986).

Figure 1: Relative Farm Income, Australia, 1954-55 to 1985-86.



Notes: Average Weekly farm income (AWFI) and Average Weekly Earnings (AWE) data are shown in Table 2.1. See notes to this table for derivation of AWFI. The trend line shown was fitted using ordinary least squares regression with the regression equation being:

$$Y = 208.54 - 2.75T$$

$$(13.69) \quad (-3.42)$$

Y is the ratio of AWFI : AWE; T is years. Figures shown in parentheses are t test values.

Source: Lloyd (1986)

a result of agricultural research and extension activities.

- (iii) The long-term problem is nothing new, and we have coped with it in the past. The graph depicts *averages*. During the decline of the past three decades, tens of thousands of farmers did extremely well—those with reasonable luck and adequate resources. Tens of thousands of others left agriculture, usually with a large "golden handshake", having sold to those who were surviving the cost-price squeeze through increased productivity. There is good reason to believe that tens of thousands will prosper in Australian agriculture in the next three decades. This can occur given similar increases in productivity, and given government action to remove the distortions which hamper agriculture, some of which are discussed later.
- (iv) There is a widespread but misguided fear that continued hard times will force

thousands off the land, and *greatly reduce farm output*. This "abandon ship" syndrome has encouraged the notion that we must actively switch emphasis from a crippled agriculture producing the traditional bulk commodities to new products, to more processing of farm products and to "high-tech" manufacturing. It is based partly on ignorance of the "economic rent" component in land values.

During and following slumps, some individual farmers fail and must sell up at disappointing prices. However, they can find buyers only if land prices fall sufficiently to give the purchaser a fair chance of success. Thus the land stays in production (perhaps less intensive) and the industry survives even though the previous owner moves on. The "economic rent" in land values, which fluctuates with product prices, acts as a cushion during slumps, in that costs fall in sympathy with product prices. Even if our current price recovery is aborted, and incomes fall below

1985–86 levels, *nearly all of our farm land will continue in farm production* because it has no alternative use. (This contrasts with many manufacturing activities, especially those subject to economies of scale: it is only a slight exaggeration to say that whether or not we have, say, a steel industry is a discrete, all-or-nothing proposition).

Thus, *improved agricultural productivity will remain vitally important* to maintaining farm incomes and export earnings, and rural research must retain a high priority. A decade from now, farming will still be providing between a quarter and a third of export earnings. As the Centre for International Economics has pointed out, declining terms of trade for agriculture do not necessarily mean that industry policy should focus on replacement industries (Stoeckel and Cuthbertson 1987). If, in one of the earlier farm slumps shown in Figure 1, the Government had decided, because of the persistent cost-price squeeze, to "downgrade" agriculture (*e.g.* by reduced spending on rural research) our farm incomes and export earnings would now be considerably lower than they are.

3. Appropriate Policy

Apart from *temporary assistance measures*, such as the Rural Adjustment Scheme, the appropriate role for government can be considered under two headings—*agricultural policy*, concerned with facilitating and encouraging agricultural efficiency, and *general economic policy*, governing wages, interest rates, investment, fiscal policy, exchange rates, and protection and industry policy.

The Policy Group of the Australian Institute of Agricultural Science has singled out one particular policy issue under each of those two headings, *rural research* as a critical issue in agricultural policy and foreign policy, and *protection and industry policy*.

3.1 Protection and industry policy

3.1.1 Levels of assistance

Since the early 1970s, the average level of assistance has fallen much more dramatically for agriculture than for manufacturing. Over the past six decades, heavy protection of manufacturing through tariffs and import quotas has greatly damaged the efficiency of our economy. It has been especially damaging to unprotected or lightly-assisted exporting and import-competing

activities through its effect in maintaining an over-valued exchange rate. The ORANI model of the Australian economy has suggested that the short-run effects of abolishing recent levels of protection of import-competing industries would be to increase farm incomes by about 17 per cent in the average season.

This perverse industry policy has often been justified as creating employment. However, it has been increasingly recognized that the second-order effects on employment offset the apparent gains from tariffs. These days, for example, higher protection for the steel industry is opposed by unions in "downstream" activities, for whom dearer steel would mean fewer jobs.

A progressive reduction in high levels of assistance should commence immediately in manufacturing and agriculture, bearing in mind the benefits the heavily-assisted industries are enjoying from devaluation. In the lightly-assisted parts of primary industry (which means over 80 per cent), farmers have a reasonable case for some relief from the burden of tariffs by the substitution of subsidies where administratively practicable. Furthermore, they can reasonably expect some relief from anti-dumping duties on their inputs, such as fertiliser.

3.1.2 Exaggerated hopes, and priorities within agriculture

In the last few years, in both Australia and New Zealand, some challenging new suggestions have been made as to how to "put agriculture right". These include the following proposals:

- that we should move rapidly towards processing much more of our farm output (more "value added");
- that we must go "high-tech", and move away from simple commodities towards specialised "differentiated" products, in tandem with better and more innovative marketing;
- that we must give much greater emphasis to new industries;
- that research funds should be reallocated to match these changed priorities.

In many ways these initiatives need careful consideration. In times of rapid change, innovations are almost certainly required. For example, the change in the exchange rate has been such that it is quite likely that some value-

adding processes and infant industries which previously were unprofitable could now be viable (though perhaps only with some changes in work practices and management, and in government policies which disadvantage processing of raw materials). Furthermore, in times of crisis it becomes psychologically and politically possible to implement new ideas and procedures which must accompany restructuring and which have been held up by plain inertia.

Enterprise and innovation, improved technology and better marketing are "motherhood" propositions. Nobody should argue against them, least of all an economist, and certainly not at the present time. My concern is that the "innovation package", together with the much-touted swing to manufacturing is being "oversold" as the solution to our trade problem. None of the innovation package is new: these suggestions have always surfaced whenever we have had low farm prices, especially the notion that the over-supply in question could have been avoided by better marketing and a dash of foresight.

However, the policy of calling for more innovations, more value-added and better marketing, costs government little money, sounds plausible, and has connotations of dynamic leadership. As things have turned out over recent years it has also provided a *smoke-screen* for cutting expenditure on much research and extension.

Some of the reasoning behind the above initiatives is simplistic and superficial, and needs more careful analysis than it has been given. Further, if the ideas are established as sound, and they require government action and assistance, this should not be *at the expense* of traditional agriculture.

Emphasis on infant industries and value-added is not just a Victorian trend: it is occurring throughout Australia and elsewhere in the world. Clearly Departments of Agriculture should be concerned with the development of new industries; no one can deny that New Zealand and Israel, for example, have had considerable success in developing some horticultural export industries. However, it must be stressed that (almost by definition) one rarely hears about the failures. Moreover, by definition new industries are small, and the gains from their development are usually outweighed by the gains from an incremental improvement in output or a reduction in production costs, from the major broadacre industries.

For example, for a given research expenditure, the development of a new technology might result in an increase of say one per cent in productivity in the industry, regardless of its size. In the wheat, beef and wool industries this would add to the value of Australian production and net exports by about \$26 million, \$27 million, and \$33 million respectively. By comparison, the same level of research funding, if it achieved the same per cent improvement in an "infant" industry earning \$100 million per annum, would add a negligible \$1 million per annum to the value of rural production (though the *eventual* pay-off *may* be high).

Horticultural exports are expected to increase by \$53 million per annum (not all from "new" products) over the three years ended 1987-88 (Minnis 1988). Recently, three "new" minor crops have emerged in Australia—triticale, peas and lupins. Over the past four years the combined value of output has risen by \$64 million per annum from a base of \$50 million, which is impressive. *However, these gains are trivial in relation to total annual exports of \$36 000 million, and our trade deficit of \$11 000 million per annum.* No estimates are available of the scope for increased exports from new livestock products, but it would be much smaller than from crops and horticulture.

Furthermore, there is a high fatality rate for new products and processes. We hear much about kiwi fruit, but little about guava, jojoba, Du Pont's synthetic leather and other disappointing innovations. Across manufacturing, well over 90 per cent of such initiatives fail.

Not that research on infant industries, or on value-adding processes, should be neglected. Rather, like all proposed research work, the justification should be on benefit-cost grounds, with no discrimination with regard to whether or not the industry or activity being researched is "new", "high-tech" or high "value-added". This is particularly so if we aim to direct research resources and public resources to maximise economic growth, which is an objective loudly and frequently claimed by state and federal governments.

If wheat is in surplus supply, and hard to sell, why not export it as flour, gluten or noodles, earning more value-added? This seems plausible and possible. It is seen as a matter for our decision as to whether or not we export in processed form. However this commonsense view is misleading. In exporting scoured wool rather than greasy wool, or gluten rather than wheat, we are exporting processing services which the

importing country could provide for itself, and usually would do if it would perform those services more cheaply. Unless export subsidies are to be employed, the exporting of such services is within our control only if we are competitive. In other words, we must have a comparative advantage, relative to other countries, not just in growing wheat, but in processing it.

Australia did expand its exports of gluten over recent years, as did other countries, and a glut has resulted. Processing provides no refuge from problems of over-supply of the raw material. The extra processing capacity, if it is to be profitable, must be utilised *all the time*, and not just when unprocessed wheat is hard to sell. If, after considerable capital investment, we increase our gross sales revenue by adding value to our wheat, it is not clear that we have done anything to protect ourselves against the renowned instability of wheat prices. To the extent that flour prices rise and fall with wheat prices, we may *increase* our vulnerability, and especially if there is a move into value-adding whenever wheat prices fall. Processing provides no sure refuge from price instability.

A host of factors will determine whether or not we have a comparative advantage, and thus a profitable investment opportunity, in additional processing of a particular raw commodity at a particular location. These factors will include, for example, the relative transport costs for the raw materials and finished products, the profitability of any by-products from processing (*e.g.* bran and pollard from milling), and the local availability and cost of particular labour skills, services and facilities.

A commodity slump which creates a trade deficit will not necessarily be followed by the immediate emergence of profitable new value-adding opportunities offering a solution to the deficit. There seems no reason to expect a rapid increase in value-added activity in the short run, even allowing for devaluation. Thus the question arises: "Is an expansion of a particular value-adding activity which does not cover its costs to be preferred to an expansion of unprocessed exports which does? And if so, up to what level of loss?"

One apparently plausible answer is: "Yes—We need the foreign exchange sufficiently to subsidise such a loss." Implicitly we would be saying that a dollar of export income is worth more than a dollar to the community, and in some cases we might judge that the loss would not be excessive. This policy would require a case-by-

case investment analysis of probably hundreds of value-adding opportunities to determine the extent of subsidy, if any, and the method of subsidy.

Such an approach, which would involve considerable administrative complexity and expenditure, might be termed "extreme intervention". "Value-added" would have become a neo-mercantilist slogan. It is at the opposite end of the spectrum from the "market forces" approach, which would require macro-economic change across the economy to improve the competitiveness of *all* traded-goods activities, export and import-competing, and not just value-added. This would work largely through a lower effective exchange rate, which involves the containing of domestic inflation. There are also intermediate strategies, some times termed "export facilitation", involving the provision by government of information and encouragement and in some cases minor subsidies. (Such encouragement of initiatives, when they turn out badly, can result in future claims on government for compensation.)

Some commentators seem greatly impressed by two trends. Firstly, the value added to minerals and farm commodities has been increasing over decades as a proportion of the value of total finished products. Second, the degree of product differentiation has also increased greatly across all industries, not just agriculture, and this is often linked with the call for *improved marketing*—specialised, differentiated and usually branded products (more common in manufacturing than in farming) usually subject to stringent quality control and priced accordingly. However these two gradual trends have ruled *since the Industrial Revolution*. They provide no basis for expecting a fortuitous explosion of profitable value-adding or product differentiation opportunities for farm products in Australia in the late 1980s, even if Australian governments succeed in their efforts to improve the climate for such entrepreneurial activity.

We must at least consider the possibility that the non-existence of a particular value-adding activity in Australia in 1988 is the result of its past unprofitability: why otherwise was it not taken up?

Its *future* profitability may be a different matter. Sufficient things may have changed in the turmoil of recent years to convert the value adding activity into a profitable one. It is certainly sensible for a government facing a horrendous trade deficit to encourage entrepreneurs to scrutinise such possibilities and to ask whether

obstacles to such initiatives can be removed. However it is not sensible to *assume* the hoped-for answer that more value-adding will be profitable, and will make a significant contribution to meeting the trade deficit.

Department of Trade statistics show that for 1986-87 unprocessed exports of mineral- and rural-based products made up 54 per cent of merchandise exports, whilst processed mineral and rural products made up an additional 33 per cent, with elaborately-transformed manufactures making up most of the remaining 13 per cent. *Over the decade ended 1986-87, the share of "raw commodities" in total exports actually increased.* Even if this trend is now reversing, change will be gradual. The contribution of value-added to meeting our \$11,000m per annum trade deficit over the next decade will be minor—not much more important than that of new products, discussed earlier.

The National Farmers' Federation, in its November 1986 Policy Statement on rural research and development, had this to say:

The balance in the allocation of scarce government resources between, and within, rural and non-rural research should be determined on efficiency grounds. The proposed National Technology Strategy which advocates moving away from research into high bulk, low value-added goods is seriously flawed on efficiency grounds. There is no *a priori* efficiency basis for moving away from the production of high bulk low value-added goods, particularly if Australia has a comparative advantage in producing such goods.

It is true that comparative advantage is not "given" and unalterable: in some cases and to some extent we can change it, but by action, not by mere hopes.

In some minds the old idea that we should reduce our dependence on traditional agriculture is accompanied by the unstated assumption that this will require active steps by government. In fact, this trend has occurred, and without any specifically targeted government action. Despite a large increase in our farm exports, the *proportion* of our export income coming from agriculture has more than halved, from over 80 per cent in the early 1950s to less than 40 per cent in the mid-1980s. The trend has been evident throughout the century, being the result of market forces and virtually autonomous.

The feeling that government *should* have some role in reducing our dependence on farming has probably been part of the motivation for rural research cuts, since this is one of the few convenient "handles" government has on the matter. There doubtless *are* constructive steps government can take (if we are sure that the trend

away from agriculture *is* too slow) but reduced research effort is not one of them.

This seems a singular mistake, given the strong evidence that subsidised rural research, as an investment, provides a very high rate of return to the community, and given the high productivity growth of agriculture compared with other sectors (Martin 1988).

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