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**Realising Australian Agricultural Potential
Economics and Sociology
applied to
Structural Adjustment Policy Development**

Philip Taylor

**Paper presented at the 46th Annual Conference of the Australian Agricultural and
Resource Economics Society, February 13-15, 2002, Canberra, Australia.**

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Realising Australian Agricultural Potential

Economics and Sociology applied to Structural Adjustment Policy Development

A paper for the annual conference of
the Australian Agricultural & Resource Economics Society

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ABSTRACT

As customers get more demanding in product specifications and supply chains get longer and more complex, producers' requirements for better information systems increase markedly, accentuating scale economies. Firm size in Australian food and fibre industries appears to be far below the optimum and, since this leads to higher unit costs, competitiveness is diminished. Australian governments encourage vertical integration, but largely ignore the horizontal integration required to make it viable. The paper outlines a the justification for a recently funded South Australian Government project and its scope, which includes:

- estimation of optimal firm size in SA food and fibre industries;
- estimation of the economic, social and environmental pay-off from structural adjustment;
- evaluation of the factors inhibiting evolution of more efficient industry structures; and
- development of socially optimal strategies for encouraging that evolution.

1 INTRODUCTION

This paper discusses a recently funded structural adjustment research project within the Corporate Strategy & Planning Branch of Primary Industries & Resources SA (PIRSA). Sections 2 and 3 argue the case for the project and Section 4 summarises the proposed research agenda. In arguing the case, the paper sets out the theoretical approach to understanding both the need for structural adjustment and the strategy options for achieving it.

The project is, in part, motivated by a target set by the South Australian Government for economic development of the State's food industries. That target will require a doubling of the size of those industries from current levels. The task is to model ways in which that target might be achieved. It is quite likely that the target will require SA food industries to be operating at, or close to, world best practice and that this will involve major structural change. Based on that assumption, the project task becomes one of developing a "picture" of an SA rural economy in which the food industries are operating at maximum efficiency, given current technology and market opportunities. Such a model will have three uses:

- to inform industry development policy;
- to provide benchmarks against which progress can be measured; and
- to assist in gaining the requisite community support.

The project will also investigate strategies for achieving the changes required.

The case presented in this paper is very much *prima facie*, being based on initial research and some speculation about the changes required. The project task will include ascertaining whether the results of that research and speculation stand closer scrutiny.

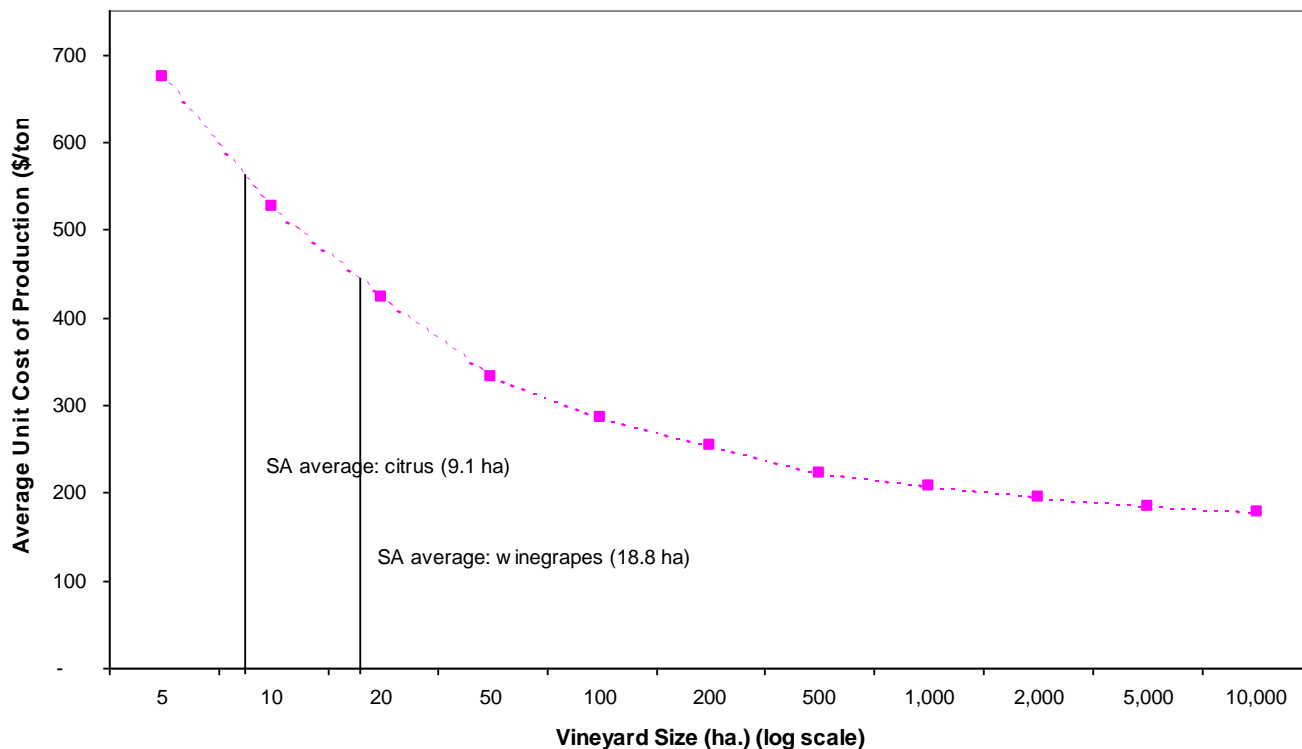
The figures quoted are for South Australia only, but the data indicates that the issues discussed are very similar in other States. Since one purpose of the paper is to seek collaboration with others interested in the same issues, the paper discusses structural issues for Australia as a whole.

2 THE EXTENT AND NATURE OF STRUCTURAL DISTORTION IN AUSTRALIAN AGRICULTURE

Policy makers and industry leaders broadly agree that, to realise the potential of the food and fibre industries in Australia, much stronger vertical integration of supply chains is needed. What is not generally appreciated is the interdependency between vertical and horizontal integration. Preliminary findings suggest that economies of scale in agriculture have grown markedly in recent decades and that, as a broad generalisation, the optimal business size of farms in many industries is in the vicinity of \$2-4 million of turnover, which is around the size of many large family farms. This compares with the average turnover for SA broad-acre farms of \$203,000 (ABARE 2000). The smallness of SA farms has a substantial impact on the unit cost of all of growing a product tailored to the specific requirements of a customer. Figure 1, showing estimated unit cost of production for premium winegrapes in the Riverland, provides an example of this. It indicates an optimal business size of at least 200 hectares (\$3.4 million turnover) compared with the SA average of 19 hectares

(\$205,000). The SA average-sized citrus farm business (9 ha, \$106,000) is also shown, as citrus production has a similarly shaped average cost curve (but different figures on the vertical axis).

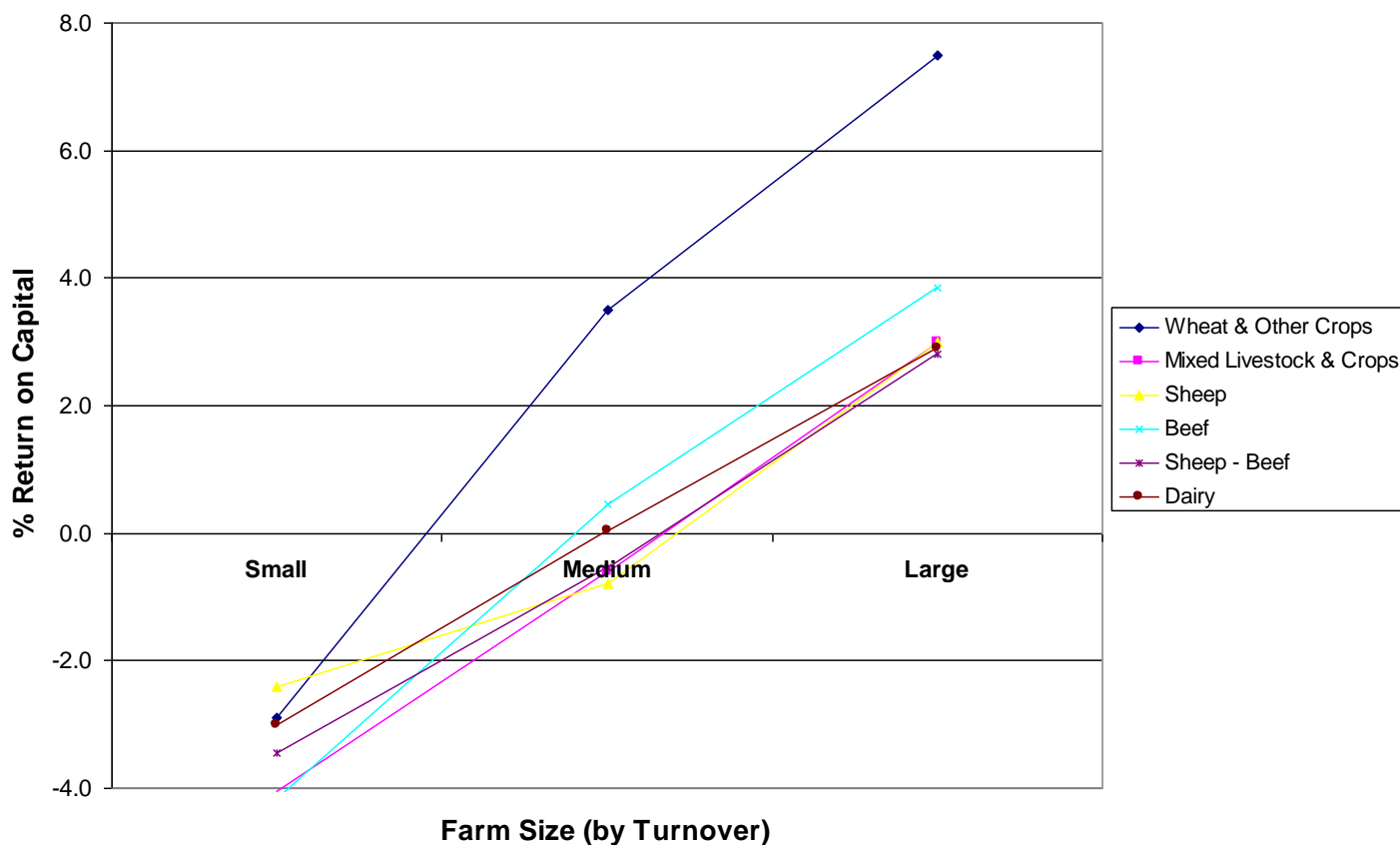
Figure 1: Average Unit Production Cost for Premium Warm-climate Winegrapes



The increase in economies of scale come not as much from the availability of larger machinery as from the need to establish information systems to keep abreast of rapidly changing technology and customer requirements. The operating cost of such systems tends not to increase much as business size increases. The unit cost is, therefore, much lower for larger farms and that explains why they are more likely to invest in the linkages and systems which modern supply-chain management demands. This conclusion is supported by ABARE *Farm Survey* data which indicates that larger farms are more profitable and that the increased profits come from a combination of lower unit costs, higher prices and greater productivity. Figure 2, summarising Australia-wide ABARE survey data for fiscal 1998 and 1999, shows both the strong correlation between profitability and business size and the similarity in profit trends across all broad-acre industries (ABARE 1999 & 2000)¹.

¹ There may be some serial correlation between profit levels and farm size as measured by turnover, but other ABARE work measuring farm size by capital value and by productive capacity show very similar results.

Figure 2: Average % Return on Capital for Small, Medium & Large Farms - 1998 & 1999



Source: ABARE *Farm Survey Reports 1999*

It is important to note that the problem of small scale is not confined to the farm. Most Australian packers, processors and marketers are as far below optimal business scale as are the growers.

A third aspect of structural distortion is that, since even the most profitable 25% of farmers do not make market-competitive rates of return on their investment (ABARE 2000), the major asset, land, must be over-priced. As a broad generalisation, most broad-acre agricultural land appears to sell for least twice its true commercial value. This explains two observable phenomena:

- the relative absence of corporate broad-acre agriculture, particularly in South Australia; and
- the fact that the brightest offspring of existing farmers seek careers outside agriculture. Unless the farm is large, it is likely that these people realise that they can maximise their lifetime income (and non-financial benefits) by pursuing non-farm professions and awaiting sale of the farm to get their inheritance.

From a policy perspective, the important question is why farmers pay so much for land. The answer appears to lie in an apparent oversupply of farmers – that is, of people who see little non-agricultural market for their skills, but have enough assets to enable indulgence of their preference for “being their own boss”. The issue is not an oversupply of farm *labour*, for which total demand has been fairly stable, at least since

1966 (ABS data quoted in Ronan 2002, Slide 22), but an oversupply of farm *managers*. This has come about because the rate of increase in optimal business size has exceeded the rate at which farmers retire. The policy implications of this will be discussed in Section 3.3 below.

The policy issue, in summary, is that, if the ambitions of Australian governments for the food and fibre industries are to be realised, significant structural adjustment will be necessary. Industry development policy will need to address horizontal integration to ensure that its vertical integration initiatives are effective.

3 WHY IS GOVERNMENT ACTION NECESSARY?

In a free-market economy, it is usually true that competition will enforce the evolution of efficient industry structures. Two factors impede that process in agriculture:

- Government Intervention - any activity, such as free extension, drought relief or marketing legislation, which absorbs farm costs will allow otherwise non-viable farms to stay in business; and
- Cultural Isolation - this makes the switch to other careers more difficult for farming people than for city people.

Commonwealth and State governments have made significant progress in rolling back many previously existing forms of government intervention. They are also addressing some of the cultural issues. However, the argument here is:

- that the structural distortions in agriculture are much greater and more complex than are generally realised;
- that the economic pay-offs from addressing them are much greater; and
- that this warrants some changes to the policy response.

3.1 The Size of the Potential Pay-off from Removing Structural Distortion

Evidence across a range of agricultural industries shows that the best managers typically achieve productivity around 50 percent above the average. On the other hand, business management literature indicates that, in industries whose structure has evolved in a competitive environment, the variation away from best-practice performance is very much smaller (among long-term survivors). This suggests that average productivity in agriculture could be increased by around 50 percent if practices employed by existing top managers were to become the norm. In addition to productivity improvements, the management skills involved in targeting a customer and producing to his/her specifications should deliver additional value of a similar order, even if that additional value was shared with others along the supply chain.

It is also likely that similar improvements can be made at other points along the supply chain. One of the often-overlooked factors limiting the establishment of value-adding enterprises in regional Australia is the risky nature of establishing a processing business there. Whereas it is usually efficient to do the processing close to the source of the raw material, it can be risky in the current environment to depend on local growers to supply product of appropriate quality at a satisfactory price. Farm-level improvements of the sort discussed above would very much reduce that risk. Not only would the volume of product in any locality be greater but, with a farmer population

skilled in growing to specifications, it would be possible to write long-term contracts before investing in value-adding plant.

Initial evidence suggests that the direct economic pay-off from farm-level restructuring could be in the order of 50-100% increase in farm-gate value. The direct effect on the processing and exporting sectors should be proportional to that at the farm gate. The indirect effects on those sectors, discussed in the previous paragraph, could be additional growth of the same order. Moreover, apart from the normal flow-on economic effects, the better lifestyle-amenity services attracted by the boost to regional incomes will enhance regional tourism.

Finding markets for the increased supply is unlikely to be an insurmountable problem. The increased supply will be accompanied by significant reductions in unit cost, both on- and post-farm, and products will be much better tailored to customer requirements. Analysis of numerous horticultural markets suggests that there are many opportunities akin to those that the wine industry has exploited: markets for medium- to high-quality products carefully targeted and well marketed, even where the commodity markets are oversupplied. Initial inspection indicates that the same is true in many meat and grain-product markets.

3.2 Policy Options

If the above analysis is correct, one policy response might be "cold-turkey" withdrawal by government from agricultural industry development, allowing market forces to exert themselves more freely. This is unlikely to deliver the best result.

The evidence of continuing farmer oversupply attests to the slow rate at which structural adjustment occurs in agriculture. While this is partly a result of government intervention impeding change, the market signals have been very clear. Average return on equity for all SA broad-acre farmers for fiscal 1998 and 1999, including capital gains, was 2.3% on average farm owner-equity of \$954,000 (ABARE 2000). This compares with the 15-year industry average for Australian broad-based managed funds of 10.7% (AFR 2001, p.6). The ABARE data imputes a wage for the average 2.1 owner-operators of \$18,100 per person. Assuming those people could continue to earn the same amount from personal exertion after selling the farm and that they invested their equity in managed funds, the decision to continue farming cost the *average* of 8,670 SA farming businesses about \$69,000 p.a. each. This makes allowance for having to spend \$150,000 on a house, which is, for example, above the median price for houses in metropolitan Adelaide.

There is often the suggestion that farmers sacrifice income for quality of life. While this is clearly true for some, most objective indicators of life quality, such as stress-related problems (suicide, heart disease, etc.) and access to education and health services, are worse in rural areas. A more plausible explanation for this lack of response to market signals is fear and ignorance of alternative career options. However, anecdotal evidence suggests that most farmers who make the decision to sell benefit as a result.

The point here is that cultural isolation is impeding the response to market signals. Moreover, the culture and institutional framework of food and fibre industries now have

a strong orientation towards dependency on government to solve their problems. Despite their best intentions and some very good short- to medium-term results, Commonwealth and State governments have been partly responsible for creating this culture of dependency.

Even conceding these points, some would advocate “cold-turkey withdrawal”, questioning the ability of government agencies to make a positive contribution to structural adjustment. Two factors suggest otherwise:

- Throughout the Western world, clearer evidence and better economic analysis of structural problems have resulted in policy formulations which have delivered major structural change. In most cases, these formulations have included strategic and negotiated withdrawals, rather than “cold-turkey”, and have been supported by both sides of Parliament and by electoral majorities.
- Better management systems, including improvements in technology and whole-of-agency strategic planning, have improved managerial capacity to implement policy choices which involve short-term costs to reap long-term gains.

If one accepts that well-structured food and fibre industries could make a much greater contribution to the Australian economy and that the impediment to that outcome is a sociological problem articulated primarily through the land market, the palette of policy instruments changes. It is essential that the farming community is properly informed about the economic realities of long-term survival and growth in an increasingly competitive and sophisticated international marketplace. Well researched and carefully marketed, this should not be an overly difficult message to sell, since Australia has many competitive advantages and the pay-off from change is likely to be very great.

Policy options for a self-reliant and internationally competitive food and fibre sector are likely to include:

- Continued legislative reform so that regulation is used only when all other means of capturing apparent opportunities for welfare improvement are exhausted.
- Tradeability of property rights, such as those over surface and underground water and over fish, subject to sustainability constraints.
- Negotiation, with individual industries (and groups of industries), of bio-security agreements which clearly articulate roles and responsibilities of government and industry stakeholders.
- Careful analysis of the impact, especially on industry structure, of non-regulatory intervention by government agencies.
- Articulation of a vision of a prosperous, self-reliant Australian food and fibre sector which has undergone structural change of the sort discussed above.
- Support for rural communities to do their own strategic planning for a different future.
- Some “golden handshake” assistance, particularly in the form of counselling, career advice and re-training.
- Encouragement to use the current buoyant conditions as an opportunity to “get out at the top”, rather than to delay the inevitable.

4 DRAFT RESEARCH AGENDA

A number of the conclusions argued in this paper are based on the findings of preliminary research only. To the extent that they imply changes in policy, those conclusions require the support of more thorough research. Data sets such as the National Land & Water Resource Audit (NLWRA), ABARE's Farm Surveys and the ABS Agricultural Census will provide an excellent platform on which to base that research.

The proposed research agenda for the South Australian project is as follows:

1. Estimate the pay-off from structural adjustment.

- 1.1. Assess the productivity of SA broad-acre and irrigated farmland under the assumption of good farm management and existing best-practice, sustainable technology. The NLWRA includes a GIS model of SA, in one-kilometre squares, which already embodies virtually all of the data required to achieve this.
- 1.2. Assess costs and returns of the major sub-industry enterprise types under the assumption of good management of optimally sized businesses. Much of the data for this is already in the hands of the PIRSA Corporate Strategy & Policy Branch. Completion of this work will require desk research of costs and returns, particularly at international best practice, for a range of industries.
- 1.3. Assess international competitiveness, at the whole-of-value-chain level, of major existing and potential value chains, using the approach of Harvard management expert, Michael Porter. This approach has already been applied to the SA wine industry by the Branch. The report was used as a discussion paper in renegotiating, with industry leaders, PIRSA's Winegrape program and the update of the State Wine Plan.
- 1.4. Model potential changes in value-adding and export.
- 1.5. Analyse how the results from Research Items 1.1-1.4 would change the land and water resource allocation between products. This can be accomplished using the Branch's existing linear programming model. A number of iterations of Items 1.4 and 1.5 will allow calculation of a meaningful aggregate of the pay-off at farm level.
- 1.6. Compare the results from 1.4 and 1.5 with current SA Food Industry ScoreCard data to estimate whole-of-chain pay-off.
- 1.7. Analyse the overall impact of the above on the SA economy, using the Monash general equilibrium model, which is already in use by the Branch.

2. Investigate policy options for effective structural adjustment.

- 2.1. Review literature on decision-making by farmers and other relevant subjects. For example, as part of the NLWRA, the Bureau of Rural Sciences and the Victorian Department of Natural Resources and Environment have combined to complete a major research project in this area. Their report and others, including reviews of previous attempts to influence farmer decision-making, will

allow a much more carefully targeted range of initiatives for achieving structural adjustment.

2.2. Trial PIRSA's Navigator process in conjunction with the community-based strategic planning projects of the Office of Regional Development. Navigator has been successful in helping small groups of winegrape growers to set priorities and collaborate to achieve desired outcomes. There is evidence that it would be a valuable complement to the work of the Office of Regional Development.

By providing a robust analysis of the potential sources of the gains targeted in the South Australian Government's vision for the SA food industry and by comparing various opportunities for industry development, Part 1 of this project will provide:

- a tool for policy development;
- benchmarks by which to measure results from adjustment projects; and
- a means of marketing proposed changes to the electorate.

Part 2 will allow program managers to learn from previous structural adjustment programs and from current programs being implemented in other States and other countries. The result should be a much more carefully targeted and successful rural adjustment program and significantly increased likelihood of achieving the desired doubling of the size of the SA food industry.

5 REFERENCES

Australian Bureau of Agricultural & Resource Economics (ABARE) (1999 – 2000), *Farm Survey Report*, ABARE, Canberra

ABARE (1995), *Australian Commodities*, ABARE, Canberra

Australian Financial Review (AFR) (2002), "The Long View", *Annual Review of Funds*, 18/7/01, Sydney

Ronan, G. (2002), *Delving and Divining for Australian Farm Management Agenda: 1970 to 2010*, a paper presented at the AARES Conference 2002, Canberra