

## INTRODUCTION

What is ‘agricultural and resource policy’? This question can be answered in two ways. Firstly, it may be seen as applying economic ways of thinking to socio-economic issues in the agricultural and resource sector where ‘the government’ is somehow involved. Government may be involved in various ways: as the solution to a problem, perhaps as the cause of a problem, or even as an innocent by-stander. But, somehow, government is involved by doing—or not doing—something. Policy analysis requires a systematic, theoretical framework for analysing specific problems. This book is concerned with developing just such a framework.

But agricultural and resource policy is more than just theory—it is the application of economics to real world problems. Thus, secondly, policy analysis involves asking questions about existing and/or possible government activities, and using a systematic, theoretical framework to develop answers to those questions. The key to good policy analysis is asking the *right questions* about existing or proposed policies. The kinds of questions that should be asked include:

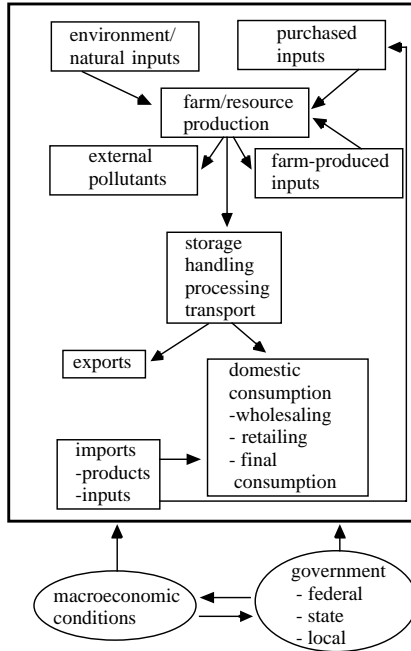
- *Why* do governments make decisions?
- *How* do governments make decisions?
- What are the *economic consequences* of the decisions that governments make?

The objective of studying agricultural and resource policy is not to learn a lot of facts about policy making. The objective is to understand the *principles* that determine how policy is made, how economists understand and evaluate the policy making process and, by using examples, to gain practical experience in applying these principles. The approach to analysis of agricultural and resource policy in this book does not involve, therefore, an exhaustive survey of Australian policy. Rather, the objective is to develop a framework which provides a starting point for analysing natural resource policy issues, and agricultural policy issues in particular.

*Natural Resources and Agriculture*

Agricultural policy analysis has often been confined to a rather narrow view of 'agriculture'. This limited view arises from identifying 'agriculture' with 'farming'. A more useful view of agriculture is that it comprises farms and all their linkages with the rest of the economy, especially the linkages between farm production and natural resources. Agriculture is simply one use of a set of natural resources comprising land, water and air. It competes with other uses for the land base—urban and semi-urban (e.g. hobby-farming), infrastructure (roads, railways), tourism and recreation, mining, water catchment, forestry and wilderness. Agriculture competes with other sectors for water, such as domestic, commercial and industrial uses, and environmental flow. Agriculture also affects other users of natural resources. Economists are especially interested in non-marketed spillovers ('externalities') which may occur between agriculture and other industries, or among agricultural firms. Such externalities include natural resource degradation, such as dryland and irrigation salinity, soil and water contamination (especially from animal wastes of the intensive livestock industries), blue-green algae (together with urban run-off), pests and diseases (of both indigenous and exotic origin), and natural disasters such as bushfires and floods.

The scope of agricultural and resource policy addressed in this book is illustrated in Figure 1. Agriculture uses both natural resources (land, water and air) and produced inputs (machinery; agricultural chemicals, fertilisers and other farm supplies; services such as machinery repair, accounting and legal, farm technical advice from the private and public sectors, specialised labour and contracting services such as shearing, pest control) to produce farm output. Some output is consumed within the agricultural sector, such as on-farm conserved feed; grain for seed, and other planting material; and feedstuffs for the intensive livestock industries such as pigs, poultry, dairy, beef feedlots, horses. Some output is non-marketed in the form of externalities. Most farm output is consumed outside the agricultural sector: depending on the industry, most may be consumed domestically (e.g. fruit and vegetables, ornamentals, pigmeat, oilseeds, sheepmeats), predominantly exported (wool, cotton, sugar, wheat, feedlot beef) or



**Figure 1 Agricultural and Resources Sector**

shared between the domestic and export markets (extensive beef, rice, barley).

For products primarily consumed domestically, marketing channels have a major impact on the profitability of agricultural production. Marketing channels include all processes from the assembly of agricultural products at farm-gate, through transportation and storage, to processing and wholesale and retail distribution. Marketing channels are especially affected by government intervention which affects the institutional structure of the marketing chain; such intervention has been a traditional focus of agricultural policy analysis. However, the efficiency of these marketing channels, and their economic impacts on agriculture, are also affected by economic conditions external to agriculture, including general economic conditions and government policy.

For products primarily exported, marketing channels also have a major impact on the profitability of agricultural production.

These marketing channels also are partly affected by domestic economic conditions. Macroeconomic conditions and national macroeconomic policy, especially relating to exchange rates, have a major impact on export-oriented agriculture.

Also important are the impacts of international economic conditions, and agricultural policies, in countries which import Australia agricultural products, or which produce competitive products. These international aspects deserve a special treatment because of the importance of trade theory to their analysis and are not covered in this book. Until the relatively recent past, Australian agriculture has had a major impact on general economic conditions and general economic policy because of its major impact on international economic conditions through agriculture's dominance in Australia's exports. The decline of Australian agriculture's macroeconomic importance, and the implications of this decline for economic and agricultural sector policy, are important issues.

### *Encountering Agricultural and Resource Policy*

The reader is likely to have at least three types of encounter with policies for agricultural and resource policy.

An encounter of the first kind is an *economics practitioner*. Economists are constantly involved in evaluating current economic policies. Those relating to macro economic decision making—the setting of interest and tax rates and the level of government spending, and the balance between monetary and fiscal policy—are currently the most visible. But, of most interest in this book, are microeconomic policies. In the agricultural sector, post-World War Two policy was traditionally oriented to the construction of orderly marketing schemes for agricultural products; and economists were extensively involved in evaluating existing policies and proposals for their extension. From the early 1970s, these marketing schemes slowly began to fall into disfavour, although it took until the late 1980s with the deregulation of domestic wheat marketing and the collapse of the wool reserve price scheme for substantial inroads to be made into marketing regulation. But marketing schemes were not the limit of government intervention in marketing—nor was marketing the only focus of government intervention.

An encounter with agricultural and resource policy of the second kind is as a *participant* in the policy process. Many of the

readers of this book will be involved as participants in the governmental process—as politicians; as public service analysts and advisers; as lobbyists, or advisers or public relations ‘flaks’ for lobbyists; as ‘hired-gun’ analysts (a major growth industry since the deregulatory fervour of the 1980s); or as economic analysts in the print or electronic media. In these roles, an economist may not necessarily use—or be permitted to use—the full range of economic skills that are available, or even use the selection of economic tools that are presented in subsequent chapters. But, hopefully, they will be aware of any anorexic version of economics that they use.

An encounter with the policy process of the third—and ultimately the most important—kind is as a *citizen*. If the price of liberty is eternal vigilance, democracy has a similar price. Australian citizens are required to attend polling booths (although *voting* is not compulsory) every three or four years for both Federal and State elections (and more frequently for Federal elections if House of Representatives and Senate elections are not synchronised). Ratepayers and residents may also vote in local government elections. Referenda for a variety of purposes, including amendments to the Commonwealth Constitution, are held irregularly. If a better-informed citizenry results in a better-performing government, a better understanding of the policy process and a more vigorous scrutiny of its participants will advantage society at large, and this book will have achieved an important objective.

### *Historical Context*

The contemporary setting of Australian agriculture is a function of its evolution. Australian agriculture now makes about the same contribution to Gross Domestic Product (GDP) as the Australian mining industry (Table 1). Agriculture contributes about as much to the aggregate economy as do the electricity, gas and water industries combined; or the entire transport industry; or the entertainment, hotel and club industries combined (Table 1). Agriculture makes about one-quarter of the contribution of manufacturing to GDP; about one-third the contribution of services from dwellings; and about one-half the contribution to GDP of either wholesale or retail trade (Table 1). Agriculture’s contribution to

**Table 1** Agriculture Compared to the Australian Economy

	1986–87		1993–94	
	GDP (\$m)	% of total GDP	GDP (\$m)	% of total GDP
Agriculture	13211	4.1	15121	3.8
Forestry, fishing, hunting	1182	0.4	1299	0.3
Mining (excluding services)	12114	3.8	16703	4.2
Services to mining	504	0.2	513	0.1
Manufacturing	52302	16.4	62535	15.9
Electricity	6689	2.1	8600	2.2
Gas	818	0.3	1029	0.3
Water	2817	0.9	3195	0.8
Construction	25151	7.9	26862	6.8
Wholesale trade	24770	7.7	29168	7.4
Retail trade	30540	9.6	37886	9.6
Rail transport	1545	0.5	1880	0.5
Water transport	1568	0.5	1896	0.5
Air transport	2833	0.9	4719	1.2
Road and other transport, and storage	9341	2.9	11681	3.0
Communications	6261	2.0	11525	2.9
Finance, property and business services	38516	12.0	44491	11.3
Public administration and defence	11949	3.7	14681	3.7
Community services	36095	11.3	47431	12.0
Entertainment and recreational services	4811	1.5	6159	1.6
Restaurants, hotels, clubs and personal services	9487	3.0	11253	2.9
Ownership of dwellings	31430	9.8	39041	9.9
Import duties	2783	0.9	4376	1.1
less imputed bank service charges	-7081		-7858	
Total	319636		394186	

Source: Australian Bureau of Statistics (1994, Table 63)

the Australian economy has, however, changed markedly over the past five decades, and the current institutional framework and policies for agriculture and resources reflect this change.

An occasional reaction to the material covered in this book is that there is too much ‘old’ material in it. Depending on the reader’s age, this might mean that some of the readings, or policies discussed, have dates before 1985—or even 1990. There are several explanations for the ‘antiquity’ of some of the material included. Firstly, while agents in the policy process are often remarkably inventive, their inventiveness frequently takes the form of recycling old tricks. Policy analysts who do not have a good knowledge of past analysis are condemned to repeat it. Secondly, some ‘old’

analysis is remarkably robust and is applicable to contemporary conditions as long as appropriate adjustments are undertaken for the empirical context. Thirdly, what might currently be observed as inappropriate policy might have its origins in policies that were appropriate when they were initially implemented. Policy analysis which neglects evolution in the underlying economic conditions that helps determine the appropriateness of policy, or evolution in the policy-generating process itself, is doomed to be constantly surprised by the apparent need to continually adjust policy. However, if policy is implemented and evaluated in the certain knowledge that it will operate in a world of constant change, there is a better chance of performing relevant policy analyses—and perhaps even ultimately implementing policies that will be relatively robust to the ‘real world’.

Agricultural policy since the Second World War can be seen as a process of transition in agricultural policy from sector- and industry-specific policies to more general policies for the economy as a whole. At the beginning of the 1950s, Australian agriculture played a significant role as the major export earner: 86 per cent of total export produce emanated from the agricultural sector in 1953–54 and agriculture employed 15.8 per cent of the workforce in 1947 (Vernon 1965, pp. 515, 1006). With relatively fixed exchange rates, a dominant export sector was crucial for generating the export income to pay for imports (Edwards and Watson 1978, p.190). Agriculture was central to the development of Australia inasmuch as that development was dependent on imports. Nurturing agriculture, and especially agricultural exports, was necessary for promoting economic development in the face of a balance-of-payments constraint to economic growth. Despite the substantial re-orientation of Australia’s international relations during the War towards the USA, Australia was still viewed by its own Government (and the UK Government) as an appendage of the UK’s economy. The serious economic difficulties Britain faced as a result of its war financing, and Australia’s membership of the ‘sterling bloc’, meant that Australia’s economic policy was also partly seen as an appendage of UK policy (Box 1). Because of international policy intervention in the form of fixed exchange rates, there existed a (second-best) ‘efficiency rationale’ for interventions by Australian governments to promote agricultural production and

**Box 1** Agricultural Production Aims

Our task now is to expand agricultural production so as to meet the domestic needs of our growing population and to increase our overseas purchasing power.

The balance of payments problem which confronts Australia underlines the urgent need to step up the rate of expansion and development in our primary industries. These industries have always been the major source of our export income and it is to them that we look for an increase in our overseas earnings.

Grains and sugar are two of the largest items of the United Kingdom dollar expenditure and any increase in the exports of these commodities from Australia to the United Kingdom or to any other country in the sterling area represents a saving of dollars, and thus contributes to the balancing of receipts and expenditures in the dollar area.

The Australian Agricultural Council, in April, 1952, announced a set of production aims for certain agricultural products, the target date being five years hence . . .

Acceptance of these aims by the Australian Agricultural Council means that both the Commonwealth and State Governments have recognised these defined levels of production as bench marks on which to base their policies.

*Source: McEwen (1952, pp. 3–5)*

exports. Examples of such interventions included home price schemes (in wheat, dairy, sugar and dried fruits), tax concessions, export promotion, publicly-funded research and development, land development, and the provision of rural infrastructure.

One seminal event, and two important processes, in the 1960s initiated events that eventually shattered the pivotal role of agriculture in the Australian economy. The seminal event was the initial abortive attempt by the UK Government to join the European Economic Community (EEC) in 1961–62. It was clear, even at the time,



that Britain remained determined to join the EEC and that, once this occurred, Australia was unlikely to retain its extensive access to UK markets for agricultural products (cf. James 1971). Australian farm export industries therefore rapidly developed alternative markets, initially especially in Japan and later throughout East Asia.

The first important process to affect Australian agriculture in the 1960s did so in a negative sense—at least during the 1960s. American agricultural economists had, from the 1950s, emphasised the relative contraction of the agricultural sector as economic growth proceeded. This analysis was generally conducted, however, in the context of a non-exporting agricultural economy. By contrast, the Australian agricultural sector had a substantial export component. The steady growth in the world economy through the 1950s and 1960s meant that—even in the face of significant trade barriers—there were sufficient outlets for Australian agricultural exports that stagnant or contracting domestic demand had substantially less impact than in other developed economies. The second important process was the post World War II Australian mining boom beginning with the discovery of massive iron ore deposits in Western Australia, and subsequently extending to major discoveries and/or development of other mineral deposits. The relaxation of export controls on iron ore foreshadowed the subsequent enormous development of the Australian minerals industry. This minerals boom provided the conditions for the relative decline of the Australian agricultural sector, analogously to the constraint provided by domestic orientation for US agriculture.

By the early 1970s, political forces conspired to create an Australian Labor Government which was markedly less sympathetic to the agricultural sector than its Coalition predecessors (e.g. its termination of the superphosphate, dairy and cotton bounties). By commissioning the 'Green Paper' on agriculture, the Labor Government provided a platform for public discussion of the effect on agriculture of the structural changes that were then proceeding in the Australian economy, and for reassessing the need for special policies for agriculture. By creating the Industries Assistance Commission (IAC), the Labor Government provided a relatively permanent forum for public discussion of economic ideas that both directly affected agricultural policy (cf. Edwards

**Box 2** Green Paper and IAC Objectives

- a. improve the efficiency with which the community's productive resources are used;
- b. encourage those economic activities in Australia, and the producers of the goods and services concerned, which contribute to improving the efficiency with which the community's productive resources are used;
- c. facilitate adjustment to changes in the economic environment by industries and persons affected by those changes;
- d. recognise the interests of consumers and consuming industries likely to be affected by the Commission;
- e. ensure that any measures for assistance to, and development of, industries are integrated with national economic policy as a whole;
- f. ensure that Australia's trade and protection policies are compatible.

*Source: Harris et al (1974, Chapter 3, quoting the IAC Act)*

(1980) for early IAC examinations of agricultural policy), and indirectly affected agriculture through examining industry protection in other sectors (Box 2).

International economic disruption associated with US involvement in the Vietnam war and the first oil price shock of 1973 coincided with the Australian Labor Government of the early 1970s. This disruption was followed by subsequent instability and diminished economic growth in developed economies (including Australia, and despite its growing trade with Japan and emerging economies of East Asia). The effects of this dislocation resulted in increasing economic criticism of the extent of government intervention in the Australian economy. While progress towards deregulation was not consistent—for example, protection in the motor vehicle industry increased in the second half of the 1970s (Balderstone 1982, Table 4.4)—the intellectual debate favouring the demise of industry protection and 'protection all round' was

won by the end of the 1970s. The political debate had intensified with the creation of the National Farmers' Federation in 1979, and its adoption of 'economic rationalist' policies (National Farmers' Federation 1981). Such policies were adopted, albeit in a very muted form, in the Balderstone Report on agriculture in 1982 (Box 3). Consistent with this theme, the Federal Coalition Government commissioned an enquiry into the financial sector which subsequently provided the arguments supporting deregulation of the financial sector in the 1980s.

Although there were other contemporaneous pressures for deregulation—e.g. IAC recommendations for deregulating the Australian wheat industry and pressures for tariff reduction—deregulation of the financial sector beginning in late 1983 was the catalyst for a sequence of as-yet-unended deregulations affecting large parts of the Australian economy. Once the financial sector was deregulated, some forms of government intervention became increasingly difficult to manage (e.g. the Wool Reserve Price Scheme). Other forms of regulation also became increasingly

**Box 3** The End of the 1970s: the Balderstone Report

General aims and objectives of agricultural policy:

- be responsive to national and international economic developments;
- create conditions under which the agricultural sector can handle change and at the same time realise its full potential in contributing to national economic growth;
- aim to encourage the efficient use and conservation of the nation's resources;
- promote the adoption of new technology and increased productivity in the farm sector; and
- be consistent with other national policies and goals. There also should be consistency of policy at the Commonwealth, State and local levels of government.

*Source: Balderstone et al. (1982, para. 1.14)*

difficult to justify (cf. Box 4); in agriculture, there was deregulation of the domestic marketing of wheat, and substantial deregulation of the storage, handling and transport of grain. But, as deregulation of the financial sector proceeded, the deregulatory fervour it invoked increasingly acquired the air of a religious crusade.

The effects of financial sector deregulation were superimposed on two other processes of the 1980s. The first was an international economic boom. The second, specific to agriculture, was the rapid increase in US agricultural protectionism from the mid-1980s, ostensibly as a bargaining chip to induce West Europeans to reduce agricultural protection. This increased protectionism resulted in greater levels of world agricultural trade, and greater competition for markets, culminating in depressed prices for many agricultural products. Depressed commodity prices, exacerbated by the collapse of farm-gate wool prices with the demise of the Reserve Price Scheme in 1990 and the effects of high interest rates resulting from international economic conditions and domestic macroeconomic policy, financially weakened many agricultural producers just as much of Queensland and northern NSW entered a long drought in 1991.

It is easy to look back on the past, and characterise it as a process of economic and policy transition. Without a crystal ball, however, it is difficult to see beyond the immediate present. In the large, there was the ostensible determination of the Federal Labor Government of 1983–96, and the subsequent Coalition government, to deregulate the Australian economy, even to the extent of pushing the States to deregulate significant portions of their own domains. Until 1993, the Federal Opposition Coalition had promoted even more extensive structural change in the Australian economy. Most State governments also paid at least lip service to the need for further deregulation of or structural reform in the economy. The evolution of the former Industries Assistance Commission into the Industry Commission via absorbing the functions of the Inter-State Commission, gave the national Government a public process for investigating areas of the economy formerly beyond the purview of the IAC. Additionally, the Federal Government commissioned the Hilmer Report to accelerate the progress towards increasing competitiveness.

**Box 4** Policies for the Deregulatory 1980s

Underpinning the economic policy reforms are the Government's social goals of greater and more equal opportunity, substantial improvements in living standards, an enhanced quality of life for all Australians and care for our environment. While objectives for the primary industries and energy sector are expressed in terms of efficient economic and resource management principles, it is progress towards these social goals that is the ultimate outcome of improved economic performance.

The Government's long-term objectives were:

- enhancing productive capacity through
  - balanced management and development of natural resources
  - developing human skills
  - improving technical capacity and research
- developing a more responsive and productive industry structure, featuring
  - an economy-wide approach to policy reform
  - lower protection all round and better-balanced assistance
- influencing and responding to the external environment
  - better (international) marketing of Australian produce
  - reducing international trade distortions
- more efficient government business enterprises, and transport & services
- positive assistance for structural adjustment

*Source: Kerin and Cook (1988, pp.4–8)*

But it is not the role of this book to divine the future. Both public and private sectors have hordes of highly paid soothsayers and entrails fossickers employed to do just that. And at least some readers of this book will hopefully join that well-remunerated band. The objective of this book is to provide a framework which

economic analysts might use to undertake their own analysis of policy issues. Those who wish for regular updates on policy specifics might undertake the annual trek to the National Agricultural and Resources Outlook Conferences, wade through the financial, daily and agricultural press, dip lightly into television, and put their name on the mailing lists of a few well-chosen politicians.<sup>1</sup> This book will have achieved its purpose if it helps these future analysts to better organise their approach to policy analysis.

### *Outline*

The art of policy analysis is to combine economic efficiency analysis (Chapter 1) with public choice (Chapter 2) in the context of the relevant institutional framework (Chapter 3). But economic analysis of policy is not the mere mechanical application of theory and techniques. Insight is required to identify relevant problems, to identify the key aspects of these problems, and to appropriately combine economic efficiency, distributional and public choice aspects. Policy analysis itself is partly an economic problem—*which* combination of economic efficiency, distributional and public choice aspects is optimal to select, given the financial and informational constraints facing the analyst?

A simple framework for integrating efficiency, distributional and public choice aspects of microeconomic policy is utilised in Chapters 4–11 and outlined below.

### *Policy Issue*

Investigating the ‘Policy issue’ means describing the perceived—or, perhaps, unperceived or misconceived—‘problem’. Why does the present state of the world require—or appear to require—rectification via government action? The appropriate identification of the policy issue is crucial to good policy analysis. If economists want their analysis to be effective, they must evaluate policy problems that are real as perceived by the policy makers. However, policy makers are not necessarily perfect in identifying real policy issues—they may persist in supporting outmoded policies long after their use-by date; they may be ‘captured’ by interest groups

or simply wish to support the interest groups who support them, irrespective of the effects of resulting policy on social welfare; or they may be ill-advised by their public servants. Policy analysts who do not dance to the policy-maker's tune have, therefore, a vital role. Such independent analysts are unlikely, however, to be employed to work for policy participants—whether politicians, political parties, lobby groups or in the public service.

### *Policy Intention*

Analysing the 'Policy intention' means describing the objective of policy—that is, what policy makers intend to achieve. The intention of policy may be to eliminate or reduce economic inefficiency, to increase incomes of disadvantaged sections of the community, to redistribute income towards members of powerful lobby groups, or to provide sops to less powerful lobby groups. It is tempting to assume that, just because a policy issue has been identified, the intention of any corresponding policy will be consistent with the identified issue. While this may happen, it will not necessarily do so. Participants in the policy process may simply misunderstand the nature of the policy issue and make an inappropriate decision. Or, even if policy makers appropriately match a policy intention with the policy issue they have identified, their intention may be derailed as a consequence of incompetence in implementation, competition within the bureaucracy which produces an unintended result, or competition among lobby groups which may derail the original intention. Or government, or one of the other policy participants, may propound one intention while covertly intending to implement another.

### *Area of Sector*

The 'area' of the resources sector that is relevant to policy analysis denotes both where the 'policy issue' is perceived to exist, and where the resultant policy is to be implemented. Policy may target the natural resource base, the farm sector, post-farm-gate industries, other sectors of the economy or the economy as a whole. The analyst must be able to identify where policy is intended to have an effect, so that this effect can be estimated or predicted, and evaluated. The analyst must also be aware that, even if a policy

carefully targets the intended area of the sector, there will be ‘collateral damage’—it is rare that the effects of a policy can be quarantined to the area of intended effect.

### *Policy Orientation*

‘Policy orientation’ refers to the level of government where policy intervention occurs. Both the Federal and State governments may intervene in external or domestic policy issues as permitted under the Commonwealth Constitution. The States also legislate to provide the powers of local government. A combined approach to policy involving two, or even all three, levels of government may be necessary or desirable.

### *Policy Mechanism*

A ‘policy mechanism’ is the vehicle by which policy is implemented: Acts or Regulations of Parliament, or executive decision. Government may choose to intervene directly by direct control, ownership of commercial or potentially commercial activities, or ownership of non-commercial undertakings. Government may also intervene indirectly, by seeking to influence individuals’ activities or community attitudes. The policy analyst must be sensitive to the wide variety of mechanisms by which governments can intervene, and diligent in discerning their often subtle or hidden forms. The participating policy analyst needs creativity with regard to mechanisms to be able to present policy makers with feasible, perhaps durable, hopefully unchallengeable and occasionally novel policy instruments.

### *Institutional Structure*

The ‘institutional structure’ of intervention concerns the various organs of government that develop, evaluate, enact and implement policy, and the various interest groups that interact with government to both effect and affect policy. Not only is the structure of these institutions important, but also the form and relative power of the relationships within and between organisations, and the determinants of these structures and relationships, and their forms and power. Without a good understanding of the processes by which policy is formulated, policy analysts cannot



explain why particular policies are enacted (or not enacted), why policies are implemented the way they are, or whether or not possible alternatives are likely to be adopted. Similarly, without such understanding, policy advisers cannot develop policies which are likely to be both acceptable to the interest groups for whom they work, nor would their recommended policies have a high chance of gaining approval from other players in the policy process.

### *Policy Performance Evaluation*

'Policy performance evaluation' concerns *why* government policy is evaluated, *who* evaluates policy, *when* policy is evaluated, *how* policy is evaluated, and whether or not there is any *economic* input into policy evaluation. The nature of policy performance evaluation is crucial for policy advisers, who may need to chart a course for evaluation which is feasible in financial terms, bearable in political terms, and satisfies the interests of lobby groups who may wish for, or wish to escape, the review of policies which affect them. Policy performance evaluation is also important for the independent analyst who wishes to influence the policy process; unless the analyst's intervention is carefully targeted, it is unlikely to be effective against the noise of a plethora of competing interests—or, perhaps, even counter-productive. Policy may be evaluated regularly or occasionally, and frequently or rarely; evaluation may occur publicly or privately, and be either formal or informal.

### *Economic Issues*

'Economic issues' refers to the broad economic scope of a policy problem. This scope will include the economic effects of existing policies and alternative policy instruments. Important issues may include efficiency versus distribution, partial equilibrium versus macroeconomic or general equilibrium approaches, theoretical versus empirical analysis, and the desirability of qualitative versus quantitative analysis.

### *Analytic Techniques*

'Analytic techniques' for policy analysis include any reputable economic or econometric modelling. In partial equilibrium analysis, this may include graphical or algebraic analysis of simple

partial equilibrium (including analysis of consumer and producer surplus). Alternatively, partial equilibrium relationships may be estimated econometrically as single equations or equation systems, and consumer and producer surplus estimated quantitatively. Partial equilibrium relationships may also be estimated using programming techniques or, if supply and demand curves can be estimated econometrically, they may be combined in mathematical programming models. Ultimately, general equilibrium models may be constructed from estimated supply and demand equations. Where variability (e.g. of weather or prices) is important, models may incorporate stochastic analysis of important relationships. It is salutary, however, to remember Edwards and Watson's (1978, p.192) sage advice that:

... economic policy making often hinges on simple figuring of the key economic magnitudes involved.

The interaction of the agricultural and resources sector with the rest of the economy, and the importance for agriculture of policies external to agriculture, are evaluated in Part IV—'intersectoral' issues. As background, simplified models are constructed of the effects on agriculture of changes in exchange rates and interest rates, inflation, and wages policy. It is then shown why, for complete analysis, more comprehensive models such as computable general equilibrium (CGE) models are required to evaluate policy options. Differential sectoral rates of export growth (the 'Gregory' thesis) are examined as an example of the effect on agriculture of changes in the rest of the economy. Both simplified and CGE models are used to examine the effects of differential sectoral rates of protection and tariff compensation. Finally, the effects on agriculture of microeconomic reform outside the agricultural sector—e.g. in banking and indirect taxation, and the Hilmer reforms—are evaluated.

### *Conclusion*

In Isaac Asimov's 'Foundation' trilogy, the psychohistorian Hari Seldon predicted the fall of the Galactic Empire based on Trantor, and the future rise of the planet Terminus. These predictions were based on a general stochastic psychological theory of human emotions and reactions sufficiently good to predict the historical sweep of the future (Asimov 1953). Economists do not, as

yet, have economic policy models that enable the prediction of future events with such precision—and they probably never will. Moreover, an inference from the ‘Lucas’ critique of 1970s macro-econometric modelling is that such policy modelling is actually impossible (Lucas 1976). The current status of economic analysis of government policy—and for agricultural and resources policy in particular—is a judicious blend of science and art.

Economic analysis of government policy has two key requirements. Firstly, good policy analysis demands an ability to ask the right questions to identify the central issues of the problem. Good analysis partly requires a good knowledge of economic theory which can illuminate the problem; but such analysis needs to be creative, to be able to see beyond a conventional formulation of the problem. Good policy analysis also requires an adequate empirical understanding of both the economic and institutional conditions of the relevant industry or industries. A good understanding is required of how the present has evolved from the past, and how the present is evolving into the future. Secondly, good policy analysis requires the deployment of the right tools to obtain appropriate answers to the questions that have been asked. But the ways of answering the relevant questions need not necessarily be complex: Edwards and Watson (1978, p.192) argued that ‘economic policy making often hinges on simple figuring of the key economic magnitudes involved’. The objective of this book is to assist readers to develop their creative and analytical faculties and therefore their skills in policy analysis.

If students merely rote learn ‘facts’ from this book, the author has failed in his intention. The author has presented *a* method of doing agricultural and resource policy, not *the* definitive approach. Readers should critically appraise the arguments presented in this book. Is the approach to doing agricultural and resource policy appropriate? Have the arguments been adequately justified on theoretical and empirical grounds? Has economic theory or the empirical facts changed so that the conclusions reported are no longer valid or relevant? Even where it is adopted as appropriate, the book’s argument must be continually reassessed—and refined and developed—for future evaluation of policy issues.