Asia-Pacific
Economic Cooperation

Sharing Experiences of Structural Adjustment Policies in the Agricultural Sector

Seminar Report

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APEC Agricultural Technical Cooperation Working Group

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Produced by
David Harris
D. N. Harris & Associates
Melbourne, Australia

for
APEC Secretariat
35 Heng Mui Keng Terrace Singapore 119616
Tel: (65) 67756012 Fax: (65) 67756013
Email: info@apec.org Website: www.apec.org

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Foreword

Agricultural structural adjustment is a key consideration for APEC's Second Trade Facilitation Action Plan to be finalised in 2007. The importance of the issue was acknowledged in the 'Leaders' Agenda to Implement Structural Reform' (LAISR) and the 'APEC Work Plan on LAISR towards 2010'. It was a key focus of APEC during Australia's host year in 2007 and the issue was addressed at the Senior Officials Meeting (SOMII) in Adelaide on 16-24 April 2007.

Developing appropriate and effective structural adjustment policies is a difficult exercise. The agricultural sectors in APEC economies face differing circumstances and economic conditions. Nevertheless policy advisors in each member economy share in a common need to understand how to respond to the pressures for structural change. One way to improve our consideration of the issue is to learn from the experiences of others.

Structural adjustment is a natural and desirable aspect of economic growth and development. It involves the movement of resources between industries to increase economic returns which are the key to wealth creation across the economy. In the agricultural sector adjustment pressures can arise from reforms to domestic policy arrangements and trade policy. It can also arise as an autonomous change caused by changes in market conditions.

A first step in APEC collaboration on this issue is to gain an appreciation of major developments in structural adjustment that have been experienced in member countries and the policies that were used. This Seminar was designed to realise this aim. Specific objectives were to:

- share experiences in developing and implementing adjustment policies in the agriculture sector;
- identify and discuss the key factors for success of the various approaches used by member economies and consider the relevance of these factors to their own situations; and
- determine priority areas for further research and capacity building to enhance economies' ability to determine and apply effective structural adjustment policies.

The seminar provided a constructive forum for APEC economies on their views on domestic experiences with structural adjustment. Participant economies were invited to prepare a short paper that would provide a set of case studies on developments in structural change and policy measures that were implemented in response to the pressures for adjustment. Participants were given a set of guidelines to focus their presentations on addressing:

- what was learnt about the design and outcomes of those policy measures; and
- how structural adjustment has impacted on the sector and/or specific industry examples.

This report includes the papers provided by participants in advance of the Seminar. Australia and the project co-sponsors, Chile and New Zealand, provided more detailed papers on some specific developments in structural adjustment in the agricultural sectors of their economies. An overview paper on issues in agricultural structural adjustment was provided by the Seminar facilitator, Mr David Harris. The OECD Secretariat was invited to make a presentation on the key findings of their recent work in structural adjustment.

All participants were invited to make a short presentation on their written contribution. There was a open discussion session at the end of each presentation that generated a high level of interaction by the participants. The forum was designed to allow APEC Member economies to share their experiences and discuss the outcomes in a collaborative environment.

The Seminar was a success in providing a better understanding of developments in agricultural adjustment in Member economies. The power-point presentations used by participants often included additional information. They have not been re-produced in this report but can be obtained by contacting the authors.

The proposal for the Seminar was developed by the Australian Department of Agricultural, Fisheries and Forestry with support from the Governments of New Zealand and Chile. Funding was provided by the APEC Secretariat and the Seminar held on 12-14 March 2008 in Sydney, Australia. In part the Seminar was held to assess the level of interest by the *Agricultural Technical Cooperation Working Group* (ATCWG) in developing further work activities in the area of structural adjustment. This report provides some comments on future work for consideration by ATCWG members.

Contents

1. An overview of seminar outcomes

Structural adjustment involves the movement of resources between industries and between different sectors of the economy. It is a natural outcome of economic growth and development and is the key to wealth creation across the economy. In the agricultural sector adjustment pressures can arise from:

- domestic and trade policy reforms; and
- changes in market conditions.

The development of policies in response to the economic pressures for adjustment in agriculture is an issue continually faced by APEC member economies. It is a difficult task because it involves a trade-off between allowing market conditions to facilitate resource movements and political pressure for government to intervene and 'manage' the process of change.

One way to improve the policy formation process is to learn from the experiences of others. Complicating this exchange is the different economic conditions and policy settings facing the agricultural sectors in member economies. These differences means policy measures are often not transferable between economies and between industries– what may work in one case will not work in another.

A further complication arises from the difficulty in judging the success of particular policy measure due to the dynamic environment in which they are implemented. Market conditions continue to evolve and change.

Despite these differences there is much to be gained from examining what measures have been used in previous situations and the subsequent outcomes. Policy development can be strengthened by learning from the successes and failures of previous actions. When examined against standard economic principles they could reveal a set of principles that could be used a guide for future policy development.

Aims and objectives of the seminar

Learning from the experiences of others requires an exchange on the policy and economic developments in agriculture. Policy advisors in each member economy are often unaware of the structural changes that have occurred in other countries. They have limited knowledge of the specific policies and programs used to manage this change. The sharing of information helps policy advisors to better understand the reasoning behind the design of the policy measures.

The aim of the Seminar was to provide a forum for APEC Economies to share their experiences with structural adjustment and the policy measures implemented in response to the pressures for change. It was a first step in APEC collaboration on this issue. Participating economies were asked to prepare a short paper that described their recent experiences. Each participant gave a presentation to the group and fielded questions during their discussion session.

The specific objectives of the seminar were to:

- provide for a sharing of experiences in developing and implementing adjustment policies in the agriculture sector;
- provide an opportunity to identify and discuss the key factors for success of the various approaches used by member economies and consider the relevance of these factors to their own situations; and
- determine priority areas for further research and capacity building to enhance economies' ability to determine and apply effective structural adjustment policies.

The seminar was a knowledge and capacity building exercise. It should be viewed as an important first step in strengthening policy development within the APEC Community. Follow up work that builds on this initial effort to understand the experiences of others will be necessary if member economies wish to improve their approach to handling structural change in agriculture.

An overview of the key points that emerged in the seminar discussions and from the contributed material may help to guide the ATCWG in considering how build on the Seminar outcomes. A brief summary of the main issues that arose is provided in the following sections. This is followed by a brief discussion on possible directions for future work.

Key points raised in the seminar presentations

The seminar commenced with an overview of some key issues in structural adjustment and a presentation on a recent Australian example of industry adjustment to policy reform. Questions were raised about the need to treat agriculture as a special case in the context of structural change in the economy.

It was acknowledged there are features of the agriculture sector that make it different to other sectors of the economy. But it was not clear if this was considered to be a sufficient reason to give the sector special status in terms of government attention.

The movement of labour out of agriculture was a key point of this discussion. The availability of alternative employment opportunities is important. Off-farm employment and the mobility of non-farming rural labour from small towns and villages to urban areas are evident in many economies.

Questions were also raised about the pace of change and how structural adjustment affects export competitiveness. These issues were seen to be important for resource movements within the sector. The development of new industries and growth of existing industries as part of structural change was discussed. It emphasised the need for careful consideration of claims and concerns about the capacity of individuals to cope with the pressures for change.

The seminar continued with a presentation on a recent Australian example of industry adjustment to policy reform. Overnight removal of all market support for the Australian dairy industry created pressures for adjustment that were addressed by a program of assistance measures for dairy farmers. It provided an example of how a developed country approached the development of transitional adjustment assistance for a policy induced structural change.

There was considerable discussion about the design of specific elements on the assistance program and the impact of the policy reform on producers and milk processors. Questions were raised about the incentives for change built into the various assistance measures and the rules established for distributing the assistance. It was evident from the discussion that:

- details on the design of adjustment policies are a major area of interest;
- the need for short term transitional assistance to facilitate change is to governments' response to the pressures for change – when is it appropriate and what is the role of market conditions is shaping the way people adjust?
- there was recognition that adjustment assistance measures can shape the way people react to the pressures for change – individual behaviour is affected by the incentives and disincentives built into the conditions attached to adjustment programs.

A number of questions were raised about the role of government in facilitating the change in land use and the movement of labour resources. Some participants from developing countries raised questions about how to balance the interests of subsistence farmers and commercial producers. This highlighted an important difference in the nature of the concerns about structural adjustment between developed and developing countries. It is an issue that needs to be explored further.

In the case of the Australian dairy deregulation, the changes were determined by individuals responding to price signals. The role and design of industry exit assistance was a major point of discussion. The government did not play a role in directing how people should change. Individual decision making was seen to be the most efficient and effective way for resources to shift either within the sector or out of the sector all together.

The seminar continued with a presentation on recent experiences in agricultural adjustment in Thailand. It included a current government program aimed at facilitating change in subsistence agriculture. Questions were raised about the design of the program and the outcomes, particularly in the context of how program participants make the transition into commercial agriculture. The discussion indicated:

- developing country concerns about the transition from subsistence to commercial agriculture;
- strong interest in knowing more about the outcomes of the Thai program; and
- facilitating structural change in a developing country context is an issue that should be explored in more detail.

A presentation was provided on the sector wide structural adjustment that occurred in New Zealand in the mid 1980s. The removal of market support for several industries simultaneously created a unique set of adjustment pressures driven by policy reform. The material presented highlighted the movement of resources within the agriculture and natural resource sector after the implementation of the policy reforms.

The New Zealand experience provided an example of how a developed country managed issues arising from a major policy induced structural change. Questions were raised about the lack of direct assistance to those affected and changes in land use. There was some discussion on the design of an exit assistance program. It was evident from the discussion:

- that participants are interested in the issue of the capacity of farmers to cope with major policy reforms;

- there is a role for allowing undistorted market returns to shape the adjustment response by individuals – there was a conspicuous lack of government direction in reallocation of resources in the New Zealand experience;
- those who are affected are in the best position to judge their adjustment response – this has implications for the design of adjustment policies;
- in considering the differences between developed and developing economies in the APEC community it is important to consider issues about the education and training of those affected and the availability of information for informed decision making;
- this aspect of the ability of farmers to cope with the pressures for change needs to be explored further.

This was followed by a presentation on adjustment experiences in Chile. The presentation highlighted the substantial structural change that has occurred in Chile's agriculture sector. There were two stages of policy reform that generated the pressures for structural adjustment. There were land reforms followed by a range of economic reforms including trade liberalisation, deregulation of the financial sector and policy measures for poverty alleviation.

The experiences of Chile provided an example of how a developing country managed issues arising from a major policy induced structural change. Like New Zealand it was sector based reform involving simultaneous policy change affecting a number of industries.

A feature of the structural change that flowed from the policy reforms was the shift in resources within agriculture. There has been a reduction in resources devoted to animal and crop products in conjunction with an increased allocation of resources to the fruit and vegetable sector. These changes are reflected in the long term output levels of the respective industries.

There was some discussion about the land reform process and its contribution to the structural changes that occurred. Trade liberalisation was considered to be the key factor. However, there was some discussion about the need for land reform as a prerequisite to help farmers cope with the effects of major policy reforms. It was evident form the discussion that:

- the issue of land reform as an impediment to structural adjustment should be investigated further – it is a relevant issue for a number of developing country members of APEC;
- the use of direct, short term transitional measures in developing country situations has to consider the cost of programs and the capacity of the Government to fund the programs;
- sector wide trade liberalisation encourages resources to move to their most profitable use within agriculture;
- changes in resource use within agriculture will not occur overnight – industry output levels gradually change as producers adjust to their individual circumstances;
- Chile is another example where market price signals determined the adjustment response of individuals – there was no government direction in the reallocation of resources.

The presentation on Chile generated considerable discussion. A great deal of structural change has occurred in the agricultural sector. It was induced by extensive trade liberalising policy reforms. Like the New Zealand experience, fears about a widespread contraction in agricultural output were not warranted:

- there was considerable interest in learning more about Chile's experiences.

The Chilean experience also raised the issue of rural poverty in the context of structural change. It was followed by a presentation on Malaysia's experiences that also noted this issue. Following the financial crisis in the late 1990s, agriculture was seen to be a potential driver of economic growth in rural areas if there was greater industrialisation. The presentation provided an example of a more directional approach to encouraging sector wide structural change.

There was some discussion about the focus of the government's program and the policy measures that were used. In general the program was aimed at improving skill base shifting and knowledge of farmers. There were no direct assistance for farmers and there was some interest in learning more about the policy measures that were aimed at encouraging farmers to be more pro-active in their response to the pressures for change. It was evident from the discussion that:

- the issue of rural poverty is a key consideration for structural change in some developing country members of APEC;
- there are some related concerns about food security; and
- education levels, training and knowledge are important considerations in designing policies to facilitate structural adjustment in a developing country context.

A paper presented by the OECD representative discussed the Secretariat's recent work in the area of structural adjustment policies. The OECD has identified three types of structural adjustment programs:

- those that encourage exiting and diversification into non-agricultural activities;
- those that aim to improve human capital; and
- those that have a combination of these elements.

The presentation discussed a set of guidelines that would represent sound structural adjustment policies. It highlighted some principles for policy development that covered:

- safety net assistance measures;
- general economic policies;
- targeted direct assistance measures which should be short term and decoupled from market signals;
- cost effectiveness;
- exit measures to help people find alternative employment; and
- the importance of transparency.

The presentation also discussed some important related issues including:

- compensation payments – grants that are permanent cannot be viewed as a structural adjustment policy;
- long term support in not a structural adjustment policy;
- structural adjustment policies should facilitate change – they should not aim to stop or direct the change;
- the importance of allowing price signals to guide individuals adjustment in the case of one-off, structural adjustment grants paid to those affected;
- the importance of ensuring those affected understand the change is permanent – this is essential for the structural change induced by policy reform to be effective; and
- the nature of risk management policies in structural change.

During the discussion several questions were raised about the implications of policy induced structural change (eg trade policy reforms) for food security concerns. This issue was raised as a concern by several member countries and it seemed to be related to products that were a staple part of the national diet (eg rice). There was some interest expressed in further exploring the link between food security and structural change.

There was some discussion on the use of safety net assistance measures and the movement of resources such as land and labour out of agriculture. There was also some discussion about the implications of differences in the situations facing developed and developing countries for policy development. It was acknowledged that policy measures are nor directly transferable between countries. It was evident from the discussion that:

- the underlying principles for guiding policy development are similar for both developed and developing countries;
- the design of policy responses in developing countries has to take into account issues that reflect their stage of economic development;
- collaboration on identifying a set of principles that could be used to help guide policy development could be a valuable exercise.

The OECD discussion was followed by a presentation on adjustment experiences in Mexico. Trade liberalising policy reforms have generated substantial structural change in Mexico's agriculture sector. Like the Chilean experience, land reform was an important factor contributing to the structural change. However, a point of difference was the provision of assistance to help farmers adjust to change in returns.

Questions were raised about the role of land reform in the way the structural adjustment occurred and the role of foreign investment. During the discussion it was noted that land reforms remain incomplete and yet there has been considerable movement of resources within agriculture.

There was also some discussion on the nature of structural adjustment assistance measures, the content of specific PROCAMPO programs and the affect of structural adjustment on productivity, farm performance and industry efficiency. In general commercial farmers have been able to cope with the pressures for change but the situation for small farmers is different. The importance of education levels, training and knowledge development was raised as key issue.

The presentation on Mexico generated an interesting discussion. A great deal of structural change was induced by trade liberalising policy reforms. Like New Zealand and Chile, fears about a widespread contraction in agricultural output did not materialise. However, in this case assistance measures were implemented with the policy reforms. The discussion highlighted:

- considerable interest in learning more about the Mexican experience;
- a closer examination of the nature of the assistance measures would be useful in the context of identifying principles for policy development;
- the role of land reform in facilitating structural change should be investigated – it was again a major point of discussion and is an issue of interest to several APEC members.

The discussion on Mexico was followed by a presentation on Vietnam's experiences with structural adjustment. A feature of the Vietnam experience is the relatively recent shift from a central planning approach to economic development to a market based economy.

Structural change in the agricultural sector has been driven by policy reform. Market prices were liberalised in 1989 in conjunction with a range of macro economic reforms. A limited form of land reform was introduced and poverty alleviation is a key issue. Assistance has been provided to encourage farm performance improvements and skill development but no direct transitional assistance measures have been used.

The key points that emerged during the discussion focused on the role of land reform in structural adjustment and issue of poverty alleviation. It emphasised the importance of these issues for some APEC members. There was some interest in learning more about the structural change that has occurred since the policy reforms were implemented. This discussion was focused on changes in industry output levels – the strong growth in coffee production was highlighted as an example.

The Vietnam case study was followed by two presentations on structural adjustment experiences in Indonesia. They focused on developments since IMF policy reforms were implemented in response to the financial crisis of the late 1990s. This involved macro economic reforms, subsidy reductions and a number of trade liberalising measures.

A feature of the Indonesian experience is the large number of small scale subsistence farmers in the agricultural sector. There was considerable discussion about the response of this component of the sector to the economic pressures for change. The issue of land reform was also raised and there was some discussion of the policy support measures that remain in place for key products (eg rice).

The implications of structural change for poverty alleviation were a further point of discussion. It was acknowledged that adjustment can help to reduce rural poverty if it leads to productivity gains and improvements in farm performance. Farmer education levels were seen as a constraint on structural change in the small scale, subsistence farming sector. Training, skill development and the availability of information on alternative farm outputs was considered to be the key issue for effective structural change in Indonesian agriculture.

A presentation on experiences with agricultural adjustment in Chinese Taipei followed the Indonesian case study. It provided a brief history of key policy developments that contributed to the structural change that has occurred. A range of industry support measures have been used for food crop products at various times and this has affected resource movements within the sector.

The main issue raised during discussion on the presentation related to policy developments affecting the rice industry. There was some interest in learning more about the use of land diversion programs to limit adjustment pressures in the rice industry. Industry support had contributed to surplus rice production and this policy was used to address the issue.

This was followed by a presentation on experiences with adjustment in the Russian Federation. It provided an extensive overview of current government programs for the agricultural sector. This includes some programs that aimed at facilitating structural adjustment. There was a great deal of interest in learning more about the content of these programs.

There has been considerable structural adjustment in agriculture since the move to a market based economy. Land reform was highlighted as a key issue. There was a debate on land ownership and the issue of land privatisation after the economic reforms were introduced. This was a major point of discussion. Questions were also raised about plans to encourage an expansion of the livestock sector and the policy initiatives that would be used to achieve this objective.

The seminar continued with a presentation on recent Australian experiences with sector wide structural adjustment in agriculture. The presentation provided an overview on farming in Australia and the drivers of structural change. There has been considerable structural change in Australia and seven factors were identified as major causes of the pressures for change:

- trade;
- biotechnology;
- water reforms;
- population shifts;
- public perceptions;
- demographic change; and
- climate change.

The presentation discussed in some detail the growing importance of climate change as a future driver of structural change in Australian agriculture. It presented policy initiatives that are currently being developed to address climate change. There will be a focus on improving farmer awareness of the farm level implications of climate change and the need to develop appropriate adjustment strategies. The Australian presentation highlighted:

- a proposal to develop a climate change adjustment program that will adapt features of previous sector wide adjustment programs.

Discussion on the presentation focused on a number of issues affecting structural change in Australian agriculture. It was acknowledged that climate change was going to be a significant factor in future adjustment decisions by farmers. It was noted that a review of drought policy is currently underway.

There was some discussion of the principles behind assistance measures that have been used by Australia to facilitate change. In general the Australian approach is to allow market prices to shape individual adjustment decisions. Programs are not designed to direct the way individuals should respond. There was also some discussion about several features of the design and role of adjustment assistance measures used in Australia. This included:

- assistance for research and development;
- the design of exit assistance to leave the sector; and
- targeting assistance to those in need – the design of asset tests for eligibility and the establishment of thresholds that limit the availability of assistance.

This was followed by a presentation on experiences with structural adjustment in PNG. The presentation focused on the coffee industry which is a major industry for the PNG rural sector. The paper discussed problems associated with land reform and the difficulties associated with the lack of cooperation between different levels of government in addressing industry development and adjustment issues.

Discussion on the presentation focused on land reform. Communal land ownership is a constraint on structural change – 70% of land ownership is in this position. Comparisons were made with the land reform issues in other countries. There was also a discussion of the adjustment response to fluctuation in world coffee prices. There was some interest in learning more about differences in the way small scale operators and large commercial plantations have reacted in the past.

The seminar concluded with a wrap-up session by the facilitator. Several themes were apparent through the course of the seminar. These included:

- structural change in not easy – there is an inclination to resist change;
- the presentations show numerous examples of substantial structural change;
- adjustment policies are not directly transferable between different countries and different industries – yet learning more about the circumstances and the reasoning behind specific policy measures is a valuable exercise;
- food security, land reform and poverty alleviation are important issues in the context of structural change for several APEC member economies;
- identifying a set principles in conjunction with standard economic principles could be a useful exercise for strengthening policy development; and
- changes that have occurred in several member countries show farmers can adapt to the pressures for change.

It was generally agreed the seminar was a valuable learning experience. There was a discussion of some options for future work to build on the knowledge base that has been developed through this sharing experiences exercise.

Potential work areas for the future

One way to improve the policy development for structural adjustment is to learn from the experiences of others. However, policy measures are often not transferable between economies and between industries – a policy that is successful in one situation may not work in another.

The agricultural sectors of APEC member countries face different economic conditions. There are also differences in the circumstances facing individual industries. It is difficult to compare and judge the success of different policy measures. Despite these differences there is much to be gained from examining the measures that have been used in previous situations and the subsequent outcomes.

This seminar has been a useful first step in developing a knowledge base of experiences with structural adjustment across a wide range of APEC economies. Further collaboration that focused on the design and outcomes of adjustment policies would lead to a greater understanding of measures that may be adaptable to particular situations facing individual economies.

One option is to arrange another ‘sharing experiences’ seminar with a sharper focus. It was evident from the discussion that member economies are more interested in the content of policy than the extent of the adjustment response. This could be the focus of a second collaborative seminar. A possible approach is to:

- ask selected countries to provide a more detailed evaluation of the adjustment polices they have used– the focus would be the design, the reasoning behind their development and the outcomes;
- invite other members to contribute presentations on the key issues they need to address in the development of structural adjustment policy in their countries;
- focus discussion of the presentations on the issues and possible ways they could be addressed based on the experiences of others.

More time could be allocated for individual presentations which would allow more opportunity for participants to reflect on what they hear. The seminar could incorporate a facilitated discussion session on how economic principles can contribute to the design of adjustment policy measures. In addition, the seminar could aim to describe some key principles that may be useful in future policy development.

This seminar highlighted the need to gain more clarity on the different perspectives and concerns about adjustment policies between developed and developing countries. This issue could form the basis of a future 'sharing of experiences' seminar. It would be useful to identify the types of policy measures that are not transferable from developed country situations to developing country situations and why this is the case:

- this outcome is likely to be of considerable interest to many developing country members of APEC;
- there may also be an opportunity to describe some key principles for policy development that apply to developed and developing country situations separately.

A non-technical, summary report that sets out best practise principles for designing adjustment policies could be a useful outcome from future work efforts. It could be aimed at officials and advisors on the front line of policy development. This could be a stand-alone work activity such as a commissioned study for discussion by ATCWG members. Alternatively it could be linked to a second 'sharing of experiences' seminar:

- the seminar could build on the work recently prepared by the OECD Secretariat and make use of the collaborative presentations made by APEC members.

Participant contributions could contribute to this exercise through an open forum session on best practise principles in structural adjustment policies. A set of guidelines could be prepared in advance of the seminar to help participants prepare for the forum session. Participants could be asked to submit a one page summary of their views on what they see as best practise principles for policy development.

The question of applicability of adjustment policy responses in developed and developing country situations was continually evident in discussions during this seminar. Issues such as land reform, poverty alleviation and food security were raised on many occasions. There is little published work available on the use of structural adjustment policies in developing country situations, especially in the context of industry specific policy changes such as trade liberalisation.

Another option for future work is the preparation of a research report that discusses the approach of developing countries to structural adjustment policies. It could be based on country or industry case studies. A number of useful case study examples were presented at this seminar. Some involved policy responses for sector wide policy reforms and others involved responses to industry specific policy changes:

- a commissioned study on developing country approaches to structural adjustment policies could be a useful document for the ATCWG to sponsor in the interests of improving regional understanding of alternative policy responses.

2. Structural adjustment policies in agriculture – concepts and concerns

Paper presented by:
Mr. David Harris
Economic Consultant
D. N. Harris & Associates, Australia

Introduction

Adjustment is a term that describes the process of economic change. In the agricultural sector it is often used to reflect farmer decisions to alter their input use and farm output. The term is used in both a short and long term context.

Over time agricultural adjustment can be observed as the macroeconomic changes that occur in the movements of resources between different sectors of the economy. An obvious reflection of this concept is the replacement of farm labour with capital. This trend is related to the migration of labour from rural areas to the cities. In occurs in both developed and developing economies as people seek alternative employment opportunities in other sectors of the economy.

The concept of adjustment also applies to changes in the longer term structural characteristics of agricultural industries. In this case the term is describing changes in resource use and industry output as individual farmers adapt to the economic events that determine industry returns. Most agricultural industries are in a continual state of change – either contracting or expanding as resources move in and out of the industry.

Adjustment is equally applicable in describing the short term management decisions made by farmers as the respond to changing market conditions in different industries. In general farmers are highly resilient and adaptable to changes in the physical and financial conditions that affect their income situation. The responsiveness of farmers is what drives the longer term changes in the structural characteristics of individual industries.

Policy advisers and decision makers (ie politicians) are often asked to do something about the pressure for economic change that drives industry adjustment. It is an area of concern for political representatives that continually arises as the economy develops. It raises a number of highly relevant questions:

- should we be concerned?
- should the Government intervene to try and stop the process of change?
- is it a good or bad thing for the economy?
- should something be done to ease the costs of transition?

Requests for advice can arise in the general context of adjusting to economic change caused by market related developments. But it also arises in the context of changes in Government policy.

The industry adjustment pressures that flow from policy reform often lead to calls for assistance from those who are adversely affected.

The question of what to do about the pressures for change from policy reform is especially relevant in context of international trade negotiations. Resistance to embracing trade liberalisation and reductions in agricultural support is fundamentally linked to this question. But the question arise equally in situations where unilateral reforms in introduced for domestic policy measures.

Concerns about the effects of policy reform or market driven changes in industry returns reflect judgments about the capacity of farmers to adjust to economic change. These concerns often lead to requests for adjustment assistance or in the case of policy reform a modification of the decision. Policy advisers have to evaluate these concerns and consider the case for providing assistance.

Responding to economic change in agriculture

When considering need for structural adjustment policies it is important to remember that economic change in rural industries is a continuous, longer term process that reflects individual responses to changes in market conditions. Farmers enter an industry after considering the potential risks and returns. The adjustment process involves farmers leaving or entering the industry. It also involves farmers expanding or reducing their involvement in the industry.

The shift of resources between industries and between different sectors of the economy is often described as autonomous adjustment. Experiences with autonomous adjustment in Australia and in other countries indicate that farmers have shown considerable resilience and a great capacity to adapt to changing market conditions.

Declining returns affect farm incomes and the long term viability of individual farm operations. Farmers react to these developments by making changes to maintain the profitability and net income position. The key point is that farmers are highly responsive to changes in their income situation. Evidence in Australia and elsewhere shows farmers can and will successfully adjust without government assistance.

From an economic welfare perspective the best response to the adjustment pressures is often to do nothing. Farmers will respond to the market prices and resource movements will occur in two ways. Some farmers will elect to leave the industry or diversify into other products. Others will remain in the industry and make changes to improve their financial position.

However, there can be a social dimension to the industry adjustment response which will generate political pressures for assistance. This is often the case for major policy reforms where the change in industry returns is seen to be ‘self-induced’. Industry representations and media reporting can exaggerate the social dimensions of economic change. It can create an overly pessimistic view among politicians and the general community.

For various economic, social and political reasons the Government may decide that some form intervention is warranted. There is generally a choice in the way the Government could intervene. They could provide some form of longer term assistance to compensate the ‘losers’ of policy reform or the ‘victims’ of structural change. The alternative is short term transitional assistance.

As policy advisers are dealing with a second best solution in these situations it is important to consider the consequences of any interventions. The fundamental principle in developing structural adjustment policies is they should be designed to encourage change and the transition of resources – it should not try to stop the adjustment process. This suggests short term transitional assistance would be the appropriate response.

Policy advisers have to design assistance measures that address a particular set of circumstances. The Government could intervene in a number of ways. So it is useful to have a framework and a set of principles to guide the development of policies that will facilitate the adjustment. Some key issues that need to be considered in designing transitional assistance measures are:

- the availability and adequacy of 'safety net' assistance;
- the targets for adjustment assistance and eligibility conditions; and
- the extent of the distortion effect on decision making.

Should we be concerned about agricultural adjustment?

This seminar is focused on experiences with structural adjustment pressures and the policy responses that have been implemented. The pressures for change can arise from policy reforms or a substantial change in market conditions. Either way it may have a significant effect on market returns and the profitability of farm enterprises. Industry participants have to adjust their business situation in order to accommodate the effects of the change on their income position:

- it raises the question of what to do about requests for adjustment assistance;
- governments may choose to intervene with good intentions but it can have a distortion effect on decision making and the process of economic change.

Structural adjustment in agricultural industries is often portrayed as a process of decline where farmers are forced to leave the land by the impact of external factors. It is a perception that is linked to the pressures to improve farm performance in order to achieve a satisfactory income.

This is a rather limited perspective of a process that has more to do with self-improvement and industry development. In reality the process of structural change is an inevitable outcome of economic development. All sectors of the economy are subject to pressures for change and agriculture is no different.

In simple terms agriculture adjustment refers to changes in the resources used by an industry in response to economic events. It is a continuous process affecting all agricultural industries. Over time resources will move in and out of industries according to changes in market conditions. A number of terms are used to describe this process. Two terms are commonly used:

- *industry adjustment* is often used to describe the way industry participants are reacting to economic events and changes in market returns; and
- *structural change* is generally used to describe how the collective adjustment response of individual entities is altering the size and structural characteristics of the industry.

Over time the multitude of micro-level adjustment decisions made by industry participants is what drives structural change. In general agricultural industries are in a continual state of change.

They are either expanding or contracting because of adjustment decisions in response to changes in market conditions.

Market forces are a major source of economic change in an industry. But adjustment pressures are also caused by changes in Government policies. For example, obligations from international trade agreements can be a significant source of adjustment pressures for import competing industries. In recent times concerns about adjustment pressures have been a major point of resistance to WTO discussions on reductions in agricultural support and import protection:

- as policy changes are ultimately determined by political representatives, the resulting adjustment pressures are seen to be self-inflicted and able to be controlled or modified by other government decisions;
- adjustment pressures from changing market conditions are not created by Government decisions but are often subject to similar political pressures for actions to somehow control or modify the change in economic conditions.

Individuals and firms in all sectors of an economy are confronted with pressures for change from time to time. Agriculture is no different. Possibly the only point of difference that arises is that trade related policy changes have been a major source of structural adjustment pressures in many countries. In certain circumstances the pressures for change may lead to adverse economic and social consequences:

- this creates political pressures for governments to intervene with assistance measures aimed at affecting the adjustment process;
- though well intentioned the interventions often have distortion effects on individual decision making which can have implications for long term industry development.

The ability of farmers to cope with the effects of economic change is the key factor in developing a policy response to the pressures for adjustment and structural change. Long term growth and development depends on the capacity of individuals to embrace the forces of change and improve the performance of their farm business. Policies that try to limit or stop the process of change will distort decision making and impose costs on the economy.

Evidence in developed economies indicates these types of policies will ultimately be unsuccessful. An alternative approach is to allow the change to occur without any assistance. This would be consistent with the economic principles that tell us the movement of resources between different industries and sectors of the economy is the best way to maximise long term wealth creation:

- this is often described as the ‘first best solution’ from an economic perspective.

However, there may be circumstances where distortions outside the industry or a severe social impact warrant some form of government intervention from a social welfare or equity perspective. Political economy considerations could also influence the final policy decision. In these situations policy advisers have to make judgements in developing an appropriate response:

- from an economic perspective this could be described as dealing with second or third best solutions.

Adapting to changing economic conditions is not a costless exercise for individuals. Some developed countries provide short term assistance with a limited distortion effect on decision making. To help people cope with change they have 'safety net' programs such as:

- unemployment benefits and/or welfare support;
- labour retraining assistance; and
- education allowances.

Apart from safety net measures there are other structural adjustment policies that are specifically designed for agriculture. These include sector wide measures that are generally available such as exit assistance or measures to improve skills. The design and objectives of these sorts of policies vary in different countries.

Agricultural structural adjustment policies also include industry specific measures that may be introduced to address particular circumstances. There will be further discussion of these and the sector wide measures in other sessions of the seminar.

Safety net assistance

For political decision makers the issue of interest is the effect of economic change on people and job opportunities. The process of changing jobs is not necessarily a painless experience – there are adjustment costs borne by individuals. Some countries have permanent 'safety net' programs to help people adjust to changes in their economic circumstances. But in other countries safety net programs are non-existent or have a limited capacity to assist in the job transition process.

Safety net assistance involves generally available programs that are not necessarily dependant on a particular event. The programs are primarily focused on income and welfare support. They are put in place because the community expects the Government to provide transitional support for those in highly disadvantaged situations.

The provision of safety net measures is based on notions of equity and fairness. Some types of safety net assistance are relevant to the issue of agricultural structural adjustment. For example, unemployment benefits and retraining allowances help people make the transition to alternative employment outside of agriculture. But sometimes these programs are not designed to cope with income losses by asset rich farmers:

- for example, eligibility conditions based on asset wealth may limit access to the programs and their effectiveness in coping with the effects of structural change.

If there are programs available it is important to assess the access conditions. Obviously the case for providing industry specific assistance is stronger if there are no 'safety net' programs in place. The capacity for farmers to change vocations may be constrained by different factors. Labour is not homogenous and jobs do not have homogenous skill requirements. The location of alternative employment may limit the options for transition. Other issues that can arise include:

- some people may not have the ability to undergo retraining;
- regional availability of alternative job opportunities may be limited; and
- the mobility of farm labour may be constrained by family and community links.

Targeting structural adjustment policies

Individuals' acting in their own self interest in response to undistorted price signals is the best way for adjustment to occur. A government intervention through transitional assistance will affect the adjustment response. If assistance is to be provided it raises the question of the objective of the assistance and what form it should take.

The availability of general assistance measures that address welfare issues may be sufficient to facilitate the adjustment process. In other circumstances the government may decide that a specially tailored industry assistance package is necessary. Short term adjustment assistance can be provided in a number of ways:

- it could involve an explicit or implicit financial transfer to producers;
- explicit assistance could involve some form of direct payment to producers or alternatively some form of indirect assistance.

The case for providing explicit adjustment assistance depends on two considerations – economic efficiency and equity or 'fairness'. The economic efficiency perspective is based on assessments about the severity, duration and scope of the adjustment costs. The equity perspective is based on judgements about what is 'fair' treatment of those who bear the costs of the reform:

- it raises the issue of targeting assistance measures through eligibility conditions.

The aim of providing adjustment assistance is not necessarily to 'compensate' all those affected by a policy reform or market driven changes in returns. There is always a spread of farmers in an industry in terms of efficiency, performance and profitability. Most farmers are capable of self-managing their adjustment decisions.

In general it seems reasonable that adjustment assistance should be directed at those who are severely affected by the change in market conditions. The scale of the adjustment pressures needs to be assessed against the changes typically experienced by the industry from market driven events. It is difficult to justify the provision of assistance in situations where:

- the scale of the impact is relatively small;
- improved market returns – higher world prices – off-sets the impact of a reform;
- existing assistance programs can adequately address the adjustment issues; and
- the industry has shown a capacity to adjust to other events with a similar impact.

Providing adjustment assistance is not necessarily a matter of 'compensating' all industry participants. The issue of precedents can be especially relevant in this situation. If assistance is provided as 'compensation' it can encourage requests for assistance for any type of policy change (eg higher income taxes) or market driven structural adjustment pressures.

The notion of compensatory adjustment assistance implies that it is provided at a level that off-sets the costs of the reform or the change in market conditions. Were this to occur it would greatly reduce the incentive for producers to change their behaviour. Producers will be less responsive to the change in returns and the subsequent improvement in industry performance would be much weaker.

An important consideration in targeting assistance is the scale and distribution of the adjustment pressures. From a wider community perspective it raises an important question:

- why should tax-payers and/or consumers fund adjustment assistance for the highly profitable members of an industry?

For this reason adjustment assistance programs often include access and eligibility conditions. This can be achieved through a 'cap' of the amount of assistance. It can also be achieved through the inclusion of a 'means test'. This is usually a test of economic (asset) wealth which reduces the amount of assistance for increasing levels of wealth. At a certain point the applicant may be excluded from receiving any assistance.

It is often advisable to incorporate access and eligibility conditions in adjustment assistance programs. This is because of the potential political reactions by the general community and the issue of precedents. It also helps to manage the budgetary costs of the programs.

A final consideration in targeting adjustment assistance is the timing and availability period of the policy measures. In situations of policy reform the assistance measures are normally provided after the reform is implemented. But it is important that assistance programs are only available for a limited period. A cut-off date on applications creates an incentive for those affected to consider their situation and make a decision on how they will adjust.

The delivery of assistance should be managed through eligibility and verification conditions. Eligibility should be restricted to those who were involved in the industry during at the time of the reform or the change in market conditions. To prevent rent seeking behaviour, new entrants should not be eligible for assistance. They did not experience a loss of economic welfare and were aware of the industry conditions when they made their decision:

The distortion effect of structural adjustment policies

Policy measures for the effects of economic change can affect the way farmers adjust. So it is important to consider the potential distortion affects of structural adjustment policies. In general there are policy measures that help resources to leave the industry and measures that encourage a change in industry performance.

Exit assistance is often designed to reflect key features of the general safety net programs. It can be means tested to limit access to those in financial difficulties. Examples of exit assistance include:

- education and retraining for retiring farmers;
- job search and counselling services; and
- assistance to help people physically re-establish themselves in a new vocation.

Assistance measures to encourage a change in industry performance are concerned with the farm level adjustment decisions by those that remain in the industry. It can involve direct or indirect assistance for producers. As a general principle these sorts of programs should allow undistorted market signals to drive individual adjustment decisions.

Market prices are the most efficient mechanism for achieving a change in resource allocations:

- it is preferable to a 'picking winners' approach where change is driven by program conditions or advice determined by bureaucrats and committees.

The provision of adjustment assistance will affect decision making process of individuals. It can lead to distortions in input and output decisions. The least distorting forms of assistance are general measures that help to improve the competitive position of the industry. These programs do not provide direct financial assistance to producers. They provide indirect benefits for all industry participants. Examples include:

- promotion of domestic output;
- infrastructure development;
- project funding for public research to identify export market opportunities and industry developments (eg new products, new technologies);
- export market development and promotion;
- industry support services (eg product inspection, market information).

There may be circumstances that warrant some form of direct assistance to farmers. The potential distortion effects of these forms of assistance can vary. In general programs involving non-prescriptive, one-off grants are preferable to tied grants that dictate the way the assistance is used. The best outcomes are achieved when individuals are able to use the assistance in ways that best suit their particular circumstances.

The most important consideration in using direct assistance measures is the incentive structure. The objective of the assistance is to facilitate adjustment but it can have unintended consequences. For example, some forms of assistance create financial incentives that encourage industry participation and the adoption of a particular adjustment strategy. This can create a production distortion because output will be higher than would be the case if no assistance was provided.

The best way to facilitate adjustment is to ensure the policy programs allow farmers to get undistorted price signals. It creates a strong incentive for farmers to assess their future prospects and consider their options for change.

3. Deregulation of the Australian dairy – a case study in adjustment

Paper presented by:
Mr. Mark Whitechurch
Senior Policy Officer, Wool and Dairy Section
Food and Agriculture Division
Department of Agriculture, Fisheries and Forestry, Australia

Key Points

1. Prior to 2000 each state government held administrative responsibility for the sourcing and sale of drinking milk within its territory. The Australian Government operated national marketing arrangements for manufacturing milk. Regulation caused the industry to be primarily domestically focused.

2. In late 1999 state governments and the Australian Government agreed to the simultaneous removal of all domestic regulations relating to the supply and pricing of milk in Australia. Since July 2000 there has been no regulated price support for Australian dairy production.

3. Deregulation of the dairy industry was intended to facilitate the development of an internationally efficient and competitive industry. Deregulation achieved this by encouraging farmers to become more efficient in their production of raw milk and by making processors become more innovative in product development and marketing.

4. Deregulation has also ensured that local market returns are open to international market price movements; we are now seeing record world prices for dairy commodities and, through higher farm gate prices, Australian farmers are now direct beneficiaries of high global prices.

5. To lessen some of the initial impact of the overnight withdrawal of all price support measures, in 2000 the Australian Government and industry implemented a structural adjustment package worth $A1.94 billion.

6. The Package was designed to ensure transparency, as well as to ensure that farmers were given a choice regarding their future in dairying:

    - the Package was designed to grant entitlements to dairy farmers who were dairy farming on 28 September 1999 and had delivered milk in 1998-99. The Package covered a range of different farming options: owner-operators, share-farmers, lease farmers and others;
    - it recognised that farmers who relied on the drinking milk markets would be most adversely affected and accordingly offered those farmers more generous payments than those who relied on the manufacturing milk sector;

- the Package allowed farmers to choose between receiving adjustment payments and continue in dairying, or take an exit payment and leave the industry. It also assisted dairy farming communities to adjust to deregulation;
- entitlements were determined by a statutory authority – the Dairy Adjustment Authority, and payments are made by Dairy Australia Limited, the levy funded dairy industry research and development organisation.

7. The Package has been successful in helping Australian dairy farmers either adjust to the deregulated trading environment or exit with some return on their investment. Many farmers who took adjustment payments either invested these on or off farm – to assist them in becoming more efficient producers with options for future growth. Australian farmers are self sufficient and now enjoy high farm gate prices as a result of strong global demand.

8. Final payments under the Package will be made in April 2008, after which the Package will be formally wound up.

Setting the scene: the dairy industry pre-deregulation

Historically, milk supply in Australia was regulated by a combination of state and Australian Government policies. For the purposes of this case study, it is appropriate to examine industry regulation from the 1980s onwards – this is where the most significant regulatory change has occurred.

Prior to 1986 the Australian dairy industry was primarily focused on supplying the domestic market, exporting only around 26 per cent of total production. Although the industry went through regulatory changes in the 1980s, state governments remained in control of the supply of fresh milk to the drinking milk sector and the Australian Government continued its responsibility for the manufacturing milk sector into the 1990s.

Prior to the mid 1980s, price regulation in the drinking and manufacturing milk sectors was structured so that milk sold on the domestic market received a higher farm gate price than milk used in manufactured goods – largely for export. This was because the price of drinking milk was set according to the estimated cost to sustain milk production on a year round basis, which is much more expensive than producing milk on a seasonal basis for manufactured product. This imbalance was a problem – it did not provide farmers or milk processors with the incentive to grow export markets. [1]

Manufacturing milk

The Kerin Plan[2] was introduced in 1986 to encourage the dairy industry to restructure and look for new export opportunities – to become internationally competitive. This was done through a manufactured milk[3] export subsidy scheme, which raised export prices around 44 per cent above average world export prices. The Plan was also designed to allow for a gradual fall in support so

[1] Joint Committee on the Impact of Deregulation in South Australia: Final Report, May 2003.
[2] The Hon John Kerin MP – the then Australian Government Minister for Primary Industry and Energy.
[3] Manufactured milk is milk that is used in the manufacturing of value added dairy products, including cheeses, yoghurt, butter, powders.

the industry could make the adjustments and rationalisations required to become a world competitive dairy product producer and exporter.[4]

While the scheme afforded a margin above world prices, dairy product manufacturers were essentially basing production decisions on international price movements, rather than an averaged and equalised price. These meant companies were able to realise the returns from their own production and marketing efforts.

The Kerin Plan was scheduled to terminate in 1992. However, the Australian Government decided to continue to support the dairy industry. The then Australian Government Minister for Primary Industry, the Hon Simon Crean MP, devised a plan to allow for the continuation of most elements of the Kerin Plan to 2000. The Crean Plan also phased down the support offered under the Kerin Plan from 1992 onwards.

The Uruguay round and Australia and New Zealand CER agreement

The signing of the Australia and New Zealand Closer Economic Relations (CER) agreement was a catalyst for change in the industry. In particular, the agreement allowed complete free trade between Australia and NZ. It gave the highly efficient and export-orientated New Zealand dairy industry unrestricted access to the Australian domestic market, meaning that for the first time Australian suppliers and processors had to compete against international product on a level playing field. This proved to be a motivation for the development of further efficiency in Australian milk production.

The Uruguay round of the WTO in 1994 deemed that payments under the Crean Plan amounted to domestic and export subsidies. To comply with its obligations under the Uruguay round agreement, the Government introduced new marketing arrangements for the industry – the Domestic Market Support (DMS) scheme – designed to expose the industry to international market forces while phasing down support. The Crean Plan was stopped on 30 June 1995 and replaced with the DMS scheme from 1 July 1995.

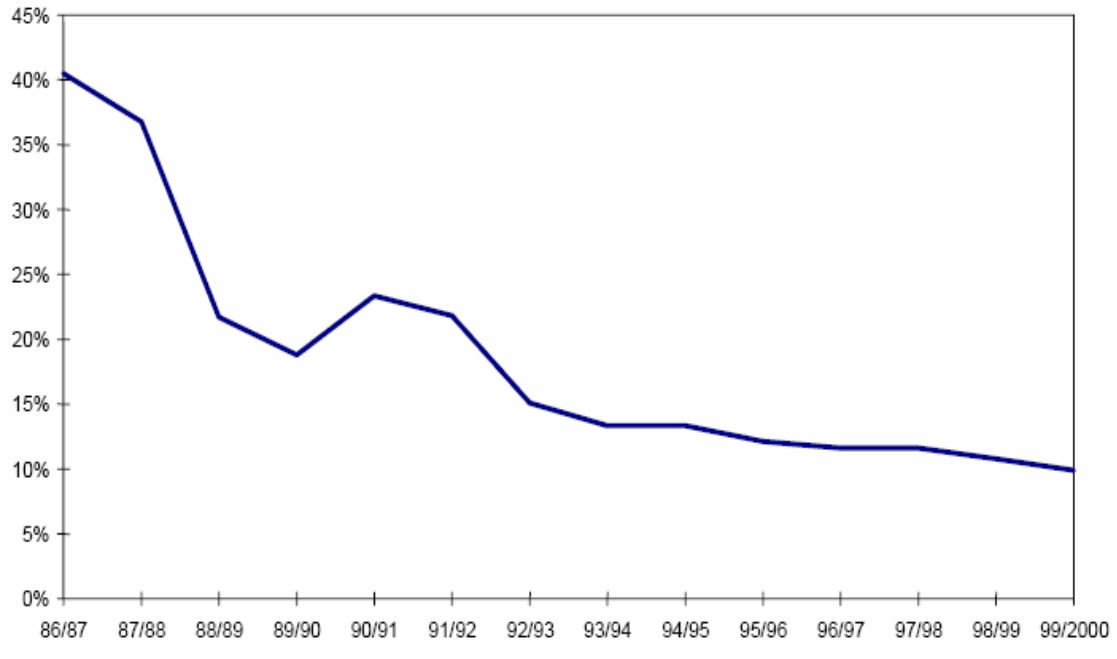
The DMS operated by imposing two levies. One paid by manufacturers based on the protein and fat content contained in milk products sold on the domestic market (paid ultimately by consumers) and a second paid by farmers who sold milk on the domestic drinking milk market.

Proceeds were paid to farmers who produced manufacturing milk – at a rate of less than a cent per litre. Payments under the DMS were intended to bring the Australian farm gate price of manufacturing milk up to par with the prices received by dairy farmers in other countries for manufactured milk – thus promoting exports.

The DMS was successful in exposing the Australian dairy manufacturing sector to international market forces while offering a small and declining measure of support – the DMS was designed to phase out by 30 June 2000 (see figure 1). The phased approach to removing regulation gave the industry the time to adjust and become an internationally competitive producer and exporter of dairy products. The cessation of the scheme on 30 June 2000 ended the payments to dairy farmers for manufactured milk, as well as the levy on domestic dairy product sales.[5]

[4]Dairy Australia Limited.
[5] ABARE, *the Australian dairy industry: impact of an open market in fluid milk supply: report to the Federal Minister for Agriculture, Fisheries and Forestry,* January 2001, p.4.

Figure 1: An illustration of the planned phase-down of support under the DMS [6]



Fresh drinking milk

Prior to complete deregulation in 2000, Australia's supply chain for fresh milk was regulated by each of the state governments. Most state governments established Dairy Authorities to control the sourcing, distribution and pricing of milk. This regulated environment was targeted at ensuring year round supply of fresh drinking milk and in effect created separate regional markets for drinking milk.

While the details of state arrangements varied slightly between each state, a commonality was the use of production quotas or milk pooling arrangements to source drinking milk. The farm gate price of milk was set by each state government depending on the approximate annual costs of production in that state.

National Competition Policy

In 1992, the then Prime Minister, the Hon Paul Keating MP, announced the establishment of an independent inquiry into competition policy in Australia. A guiding principle of the review was that regulation should not restrict competition unless these restrictions passed a 'public benefit' test – where regulation was the only effective means of ensuring the public interest prevailed. A key recommendation of the inquiry[7] was for the immediate review of state and Australian Government laws which restricted competition.

The ensuing review of the 'public benefit' of Victorian state based drinking milk regulations (conducted in the late 1990s) found that the regulations caused a negative net public benefit. Accordingly, under the National Competition Policy agreement the Victorian government was

[6] Australian Dairy Farmers Limited.
[7] Hilmer Committee Report, handed to Government August 1993.

required to remove its milk pricing regulations. All other states found net public benefit in maintaining regulated prices for drinking milk.

It is important to note that Victorian dairy farmer and manufacturing representative bodies supported removal of the regulations. Through Australian Dairy Farmers Limited, the peak representative body for dairy farmers in Australia, farmers in all milk producing states recognised that complete deregulation was imminent if Victoria deregulated – largely because Victoria produced two thirds of Australia's milk (a large portion for export) around the time of deregulation.

However, dairy farmers and processors in the other states were reluctant to give up regulation, particularly given their greater reliance on the higher priced drinking milk market. Notwithstanding this, the states recognised their own arrangements were unsustainable if Victoria proceeded with deregulation.

This was largely because Australia's Constitution ensures free interstate trade. If Victoria deregulated it would be able to provide cheaper milk to neighbouring states and therefore out-compete local supplies of fresh drinking milk. Accordingly, all states agreed to an orderly and managed reform process, provided the Government could put together a restructure package.[8]

In 1999-00 the dairy industry and the Australian Government negotiated the Dairy Industry Adjustment Package which signalled the end of all Government regulation of milk pricing.

The Dairy Industry Adjustment Package

Following the decision to deregulate the Australian dairy industry, both Government and industry agreed that structural adjustment within the industry should occur with the least possible disruption. Accordingly, on 28 September 1999, following consultation with industry, the Australian Government announced its intention to implement a $A1.74 billion restructure package – the Dairy Industry Adjustment Package (DIAP). The DIAP remains the largest package provided to an Australian agricultural industry to assist with structural adjustment pressures.

Design of the DIAP

The DIAP originally comprised three programmes: the Dairy Structural Adjustment Programme (DSAP); Dairy Exit Programme (DEP – which later became Dairy Type Grants); and the Dairy Regional Assistance Programme (DRAP). These programmes were designed to give dairy farmers choices for their future: to either position themselves to operate in a deregulated environment or to exit the industry with some return on their investment. The DRAP was set up to assist communities that were dependent on dairy farming to cope with structural adjustment.

In 2000 the Australian Government established a statutory authority – the Dairy Adjustment Authority – to administer the DSAP, which is the largest component of the DIAP. In particular, the Authority determined the eligibility of individual farmers to receive adjustment payments as well as the value of these payments.

[8] Dairy Australia Limited.

To be eligible for DSAP payments a person needed to be a dairy farmer on 28 September 1999; the use of this date ensured that only farmers who were farming under the formerly regulated system received payments. Eligible farmers would receive quarterly payments over 8 years (a total of 32 quarterly payments) starting July 2000.

Farmers did not have to own their dairy farm to be eligible for DIAP payments – farmers could be farming as share-farmers, lease-farmers or owner-operators. This reflects the concerns of industry and Government that to be successful, the DIAP needed to provide adjustment payments to all dairy farmers.

In recognition that deregulation would have a more dramatic impact on farmers who sold milk to the more heavily regulated drinking milk sector, the DIAP was structured so that farmers who were reliant on this sector received higher payments compared with those who sold their milk for use in manufactured goods.

Government considered that as consumers would benefit from deregulation through lower retail prices, it was appropriate that consumers fund the DIAP. Accordingly, the DIAP is funded by a retail levy imposed on the sale of drinking milk – at the rate of 11 cents per litre.

Proceeds of the levy are kept in a trust fund held by Dairy Australia Limited, the levy funded dairy industry research and development organisation. Dairy Australia Limited is also responsible for making quarterly payments to entitlement holders, based on advice from the Authority.

To ensure transparency it was important to keep the levy funds under the control of an entity separate from the entity responsible for making eligibility determinations. An electronic register of entitlement holders and payment details is held with a third party provider which also strengthens the transparency of the DIAP.

Entitlements under the DIAP were capped at a maximum of $A350,000 per farmer. While the average payment was around $A55,000 per farmer, farmers in New South Wales, Queensland and Western Australia received much higher average payments because of their reliance on the more heavily regulated drinking milk market. Based on the national average entitlement of $A55,000, the average dairy farmer receives $A6,875 each year (over eight years) in four quarterly instalments of $A1,718.

The programmes under DIAP

Dairy Structural Adjustment Programme – $A1.63 billion

This is the major element of the industry restructure package, with expenditure to date of $A1.62 billion. Payment rights under DSAP were determined in 2000 by the Authority. Payments under the DSAP have been made to farmers on a quarterly basis over 8 years, ending April quarter 2008. Farms were eligible for a DSAP payment if they were operative at the time of the national deregulation agreement on 28 September 1999. Farms which had ceased operation before this date (or entered production afterwards) were ineligible for any payment right.[9]

[9] Note that the Supplementary Dairy Assistance, introduced in 2001 offered discretionary payments to farmers, including those that had delivered milk in 1998-99 but had left dairy farming before 28 September 1999.

DSAP payments are fully decoupled from future milk production and entitlements are based on production levels of individual farms in 1998/99. Once granted, an individual's entitlement is not affected by any subsequent change in their status as a dairy producer (or their level of milk production). A farmer retained their entitlement if they subsequently exit the industry (unless they took an exit payment under the DIAP).

As at 1 January 2008 $A1.62 billion had been paid to farmers under DSAP to 29,934 eligible farmers.

Dairy Exit Programme – $A30 million

Farmers who qualified for a DSAP payment, but who chose to leave the industry within two years of deregulation, were eligible for exit funding under the DEP. The maximum value of this one-off exit payment was $A45,000. To qualify, farmers were required to first sell their interest in their farm and then withdraw from agricultural production for five years. If a farmer chose to take an exit payment when exiting the industry, the remainder of their DSAP entitlement was relinquished.

The DEP closed in 2002 – 141 farmers received payments worth a combined total of $A5.92 million.

Following the closure of DEP, it was decided to continue the exit programme under a new programme, Dairy Type Grants (DTG). This was because although the DEP was underutilised, exit support was seen as necessary while the industry was still going through adjustment. Funding for the DTG continued from the original allocation of $30 million to the DEP.

The DTG closed on 30 June 2007 – 35 farmers received payments worth a combined total of $A1.21m.

Dairy Regional Adjustment Programme – $A65 million

In addition to direct farmer payments, $A45 million was set aside to assist communities adjust to the economic impacts of deregulation. There was a $A20 million extension of DRAP was provided in 2001. Under the DRAP, individuals or groups in affected regions could apply for one-off grants to assist in the establishment of viable alternative economic activities to dairy. Applications for the DRAP closed in 2004.

There were 344 entities granted payments under the DRAP, worth a total of $A63.6 million at 1 January 2008.

Extension of the DIAP – the $A139m Supplementary Dairy Assistance scheme

Deregulation affected the incomes of all Australian dairy farmers. However, the impacts of deregulation were greatest in the states where drinking milk traditionally accounted for a large share of total production.

In late 2000 a study by the Australian Bureau of Agricultural and Resource Economics (ABARE) identified that the impacts of dairy deregulation had varied significantly across different regions of Australia. Producer incomes had fallen significantly in the drinking milk states (New South Wales, Queensland, Western Australia), as prices paid for daily drinking milk deliveries under

new contract arrangements were well below the previous regulated price. Industry exits had been greatest in these regions.

By contrast, in states where dairy manufacturing and export account for the major part of production, average farm gate returns actually increased in 2001-02 due to the beneficial impact of higher world prices and favourable exchange rate movements.

In response to the ABARE findings, the Australian Government implemented an additional programme – the Supplementary Dairy Adjustment (SDA) Scheme. The SDA targeted dairy producers in the regions that were most adversely affected by deregulation. While the SDA had links with DSAP entitlements, the SDA also allowed a discretionary payment to be made to farmers who were not receiving DSAP payments. There were around 660 discretionary grants made under SDA.

As at 1 January 2008, $A122 million in SDA payments have been made to 7,742 farmers. Including the extension of the DIAP in 2001 the four programmes involved total funding of $1.94 billion.[10]

Industry Statistics – a pre and post deregulation comparison

Key points on farm numbers and production (table 1) include:

- following deregulation, the number of registered dairy farms in Australia fell by around 1,000 in 2000-01 to near 11,839. This represents a decline of around seven per cent during the year, which is roughly three times the average trend rate in farm exits over the previous five years;[11]
- the number of registered dairy farms fell by 3,784 between 2000-01 and 2006-07 – a result of deregulation and drought;
- while milk production in Australia reached a high of 11,271 million litres in 2001-02, it has declined to 9,582 million litres in 2006-07 because of ongoing drought.

Table 1: Farm numbers and milk production

	1979-80	1999-00	2000-01	2006-07
Farm Numbers	21,994	12,896	11,839	8,055
Milk Production (billion litres)	5.3	10.8	10.5	9.5

Table 2: National herd size and annual milk yield

	1979-80	1999-00	2000-01	2006-07
Cow herd (million)	1.880	2.171	2.176	1.810
Milk Yield (litres/head)	2,848	4,996	4,859	5,163

[10] Includes an estimated $75 million in administrative expenditures.
[11] Dairy Australia Limited.

Table 3: Australia's dairy exports

	1990-91	1999-00	2000-01	2006-07
Export value ($A million)	712	2,291	3,019	2,532
Export volume ('000 tonnes)	350	936	903	846

Table 4: National average farm gate price of milk

	1990	1999-00	2001-02	2006-07	2007-08
Farm gate price (cents/litre)	31.95[12]	29.11[13]	33.0	33.2	43.0

Key points on the national herd size and milk yields (table 2) include:

- cow numbers have remained relatively steady since 1979-80 – at around 1.8 million head;
- cow numbers fell by around 366,000 head between 2000-01 and 2006-07, largely a result of drought;
- the decline in farm numbers along with relatively static cow numbers reflects a period of consolidation within the industry;
- average annual milk production per cow in 2006-07 was 5,163 litres, up by 2,315 litres on 1979-80 production;
- on average, dairy cows in South Australia are the most productive in Australia – capable of producing an average of around 6,500 litres per annum;[14]
- these strong productivity gains are attributable to improvements in herd genetics, pasture management practices and supplementary feeding regimes.

Key points on Australia's export performance (table 3) include:

- in 1990-91 exports were valued at $A712 million – they had more than doubled to a value of $A1.6 billion by 1995-96;
- Australia's dairy exports were valued at $A2.5 billion in 2006-07, down on the previous year's exports because of ongoing drought;
- since deregulation the Australian dairy industry has confirmed itself as a highly productive, export focused industry. Although Australia produces only 2 per cent of the world's milk, Australia holds 12 per cent of the world's dairy trade by value.

Key points on Australian milk prices (table 4) include:

- in 1990 the Australian average farm gate price of manufacturing milk was 24.2 cents per litre. The national average price of market/drinking milk was 39.7 cents per litre;
- in 1997 the average national price of manufacturing milk had dropped to 23.6 cents per litre, while the average price of drinking milk had risen to 51 cents per litre;

[12] Taken as an average of the manufacturing and drinking milk farm gate prices.
[13] Taken as an average of the manufacturing and drinking milk farm gate prices.
[14] Dairy Australia: *Australian Dairy Industry In Focus,* 2007.

- the current increase in milk prices is largely a result of strong world demand for dairy products and a shortage in global supply.

Achievements of deregulation

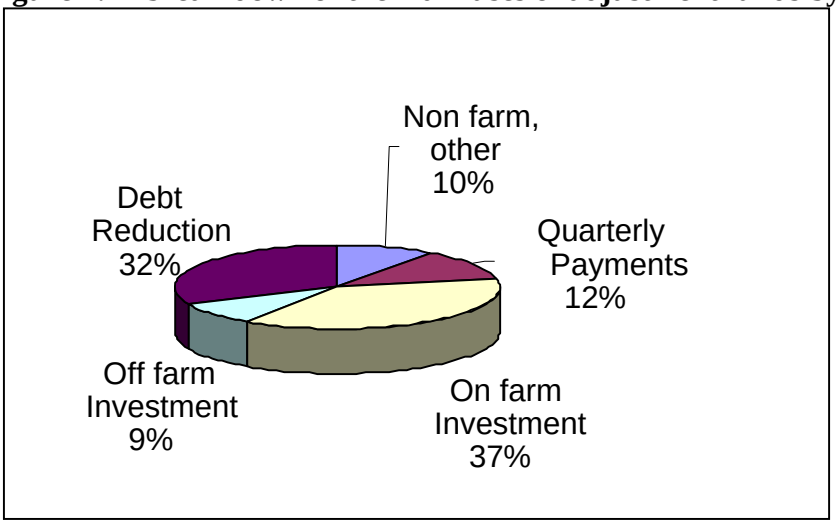
Deregulation has been successful in improving the efficiency of Australian dairy farmers. The overnight removal of state and Australian Government price regulations had an immediate impact on farm incomes, particularly in the states that rely on fresh milk sales. Without the $1.94 billion DIAP, it is likely that the effects of overnight deregulation would have adversely affected viable milk producers, and accordingly the long term sustainability of the industry.

This has been confirmed by a number of reports. Examples include the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) taskforce report on the delivery of the DIAP and the report on the effects of deregulation by the Australian Bureau of Agriculture and Resource Economics (ABARE) – both initiated in 2000.

ABARE's report found the DIAP was successful in easing the pressures of overnight deregulation on the industry and dependent communities. It also found consumers benefited from deregulation by a reduction in milk retail prices. A key finding of the ARMCANZ report, which was presented to Ministers in 2002, was DRAP was successful in providing employment solutions and social support services for communities in regions most affected by deregulation.

Farmers who chose to receive structural adjustment payments and continue in the industry used these funds for a number of purposes, primarily on-farm investment and debt reduction. On-farm investments included upgrades in milking and irrigation infrastructure to improve milking capacity, as well as pasture improvements to increase milk yield. Debt reduction was undertaken by many dairy farmers to increase the business' financial flexibility. Results of a Dairy Australia survey on use of structural adjustment funds by dairy farmers can be seen in figure 2.

Figure 2: A break-down of the main uses of adjustment funds by dairy farmers[15]



[15] Dairy Australia Limited.

Deregulation has forced milk processors to become more innovative in terms of product development and marketing strategies – to enable them to become more competitive for the consumer dollar against alternative products. Deregulation has allowed larger, more innovative processors to expand their businesses and thrive in the competitive market. The DIAP has allowed dairy farmers to consolidate and thus produce more milk using fewer inputs.

The overall result is that Australia's dairy exports have remained highly competitive against the products of other exporting countries which continue to offer subsidies to support milk production. Although Australia produces only 2 per cent of the world's milk, Australia holds 12 per cent of the world's dairy trade by value.

The impact of dairy deregulation varied substantially across different regions. The number of registered dairy farms in Australia fell by around 1,000 in 2000-01 to near 11,800. This is a decline of around seven per cent during the year, which is roughly three times the average trend rate in farm exits over the previous five years.[16] However, farm exits were concentrated in the drinking milk states, which saw farm numbers decline by around 15 per cent. In major production regions such as Victoria farm number movements were in line with five year trends.

From a national production perspective, a more significant indicator of the success of deregulation is the relative stability in the overall size of the herd in the 3 years following deregulation. This indicates that although farm numbers have declined since deregulation, remaining dairy farms are expanding the size of their herds. Severe ongoing drought has been the major cause in the falling herd size since 2005-06.

National milk production declined marginally in 2000-01. While accelerated farm exits had some effect on production, the primary reason for the decline was the down-turn in average milk yield per cow associated with drought.

The design of the DIAP

The DIAP lessened the impact of deregulation on farmers who relied heavily on the generously subsidised drinking milk market. This was achieved by the formula used to determine payment rights, which gave a higher price to farmers who sold their milk to the drinking milk market throughout 1998-99.

The DIAP was designed as a flexible package that offered a number of targeted programmes to ensure that farmers were given the option to either remain in the industry and adjust, or exit with dignity and a return on their years of investment. The DIAP was also designed with the broader community in mind. It recognised that dairy-dependent communities would be affected by overnight deregulation, and accordingly provided generous support to assist such communities to develop new income generating industries.

After the implementation of the initial package, the Australian Government recognised there were a number of farmers who were particularly affected by deregulation, and as a result, introduced the SDA programme. This programme was successful in reducing the negative impacts of deregulation by allowing further payments to those most adversely affected by deregulation, including a discretionary payment option.

[16] Dairy Australia Limited.

An important design feature of the DIAP was the separation of the entity that determined entitlement rights –the Dairy Adjustment Authority – from the entity that holds the trust fund for the DIAP and makes payments to farmers – Dairy Australia Limited. At the time of deregulation, both of these entities were government authorities.

Although this design allowed transparency through the duration of the DIAP, an unforeseen complication with this arrangement was the privatisation of Dairy Australia in 2003, meaning that the Government was forced to devise new accountability arrangements to allow Dairy Australia to continue to administer the trust fund for the DIAP as a private organisation.

A further important design of the DIAP was that entitlement holders would receive their payments each quarter over an eight year period. This allowed farmers to build additional income into their budgets, and has provided them with the financial flexibility to cope with deregulation.

The Package was designed to allow farmers to take lump sum payments in the form of bank loans, secured against their DIAP entitlements. This allowed farmers to undergo immediate capital improvements to their property.

Clear communication has been a success in the roll-out of the DIAP. Government and industry have worked closely to ensure that all farmers, extension officers, industry groups, processors and the financial sector are aware of the progress of the DIAP. Clear communication has been particularly relevant at the roll-out and wind-up stages of the DIAP.

It was important to design the DIAP in a form that was consistent with Australia's World Trade Organization obligations. This was achieved by linking restructure payments to past levels of production, as well as ensuring that restructure payments were not linked to exports of dairy products.

In 2004 the Australian National Audit Office (ANAO) completed a performance audit of the Australian Government's administration of the DIAP. The ANAO found that the DIAP was implemented consistently with the Government's policy and achieved its objectives. It also found that the DIAP trust fund was managed consistent with the legislation.

An ANAO criticism was that planning for the implementation of the DIAP was insufficient and increased the risks associated with possible delays and high administrative costs. The Australian Government Department of Agriculture Fisheries and Forestry noted the criticism, and in its response to the ANAO outlined that it had underestimated the workload and demands on the Authority in the initial roll-out stages of the DIAP. The Department agreed with the ANAO recommendation that future programmes of this scale should include more thorough identification and analysis of risks, costs and challenges of implementation – thus enabling greater assurance of timely and cost effective programme delivery.

The wind-up of the DIAP

As planned under the enabling legislation, final payments to farmers under the DIAP will be made in April 2008. Arrangements are currently being put into place to wind up the Authority in December 2008, including transfer of residual functions to the Department. The levy that funds the DIAP will be terminated in the first half of 2009 – once all debts associated with the DIAP are brought into balance.

Further information

There is a range of web-based information on deregulation of the Australian dairy industry, the DIAP and the dairy industry in general.

Deregulation and the DIAP:

The Dairy Adjustment Authority: www.daa.gov.au

The National Competition Council: www.ncc.gov.au

The Australian Government Department of Agriculture Fisheries and Forestry: www.daff.gov.au

Australian Government Senate inquiry into deregulation of the Australian dairy industry: http://www.aph.gov.au/Senate/Committee/rrat_ctte/completed_inquiries/1999-02.htm

Australian Parliament House Library, for information on the enabling legislation for the DIAP: www.aph.gov.au/library/pubs

Comlaw, the Australian Government website listing all Australian primary and secondary legislation, regulations etc: www.comlaw.gov.au

General dairy industry information:

Dairy Australia Limited: www.dairyaustralia.com.au

Australian Dairy Farmers Limited: www.australiandairyfarmers.com.au

4. Experiences with agricultural structural adjustment – Thailand

Paper presented by:
Ms. Vannapha Yongchareon,
Director, Bureau of International Agricultural Economics
Office of Agricultural Economics
Ministry of Agriculture and Cooperatives, Thailand
and
Ms. Ratchanee Wongchantrakarn
Senior Policy and Planning Analyst, Bureau of International Agricultural Economics
Office of Agricultural Economics
Ministry of Agriculture and Cooperatives, Thailand

Introduction

Agriculture remains the major sector in the Thai economy. It plays important roles as the country's base of economic and social development. Agriculture has been traditionally a way of life of the Thai people. In addition to providing the main sources of income and employment for farmer and rural people, it has supplied food and agricultural products for domestic consumption and exports. Internationally, agriculture has continued to gain net export revenue in the country's balance of trade.

Despite of its important roles to play in the Thai economy, agriculture is facing a number of changes which generate major impacts on the sector. These can be described as deterioration of natural resources in agriculture; establishment of free trade arrangements both at bilateral and multilateral levels; price increases of factor inputs; climate changes (natural disasters, global warming); changes in consumers' behavioural preferences (food safety, nutrition awareness), etc.

All these changes have been challenging to sustain growth and development in agriculture. Among these impacts, one of the most important problems remained in the rural sector is "poverty". Hence, Thai agriculture needs to take adjustment in response to changes.

The 10th National Social and Economic Development Plan (2007-2011) has set up the policy guidelines for implementation on agricultural development. Under the 10th Plan, development strategy has outlined the adjustment target by focusing on "farmers" as the centre for development.

For implementation, the targeted farmers have been categorized into 2 groups, i.e. Small farmers who are poor vs. medium scale or commercial farmers. The former will be developed so as to achieve self-reliance and sustainability. The latter will be developed to increase production potentials so as to become competitive under the free trade regime.

Based on the two categories of target groups, agriculture structural adjustment policy guidelines are as follows:

- *Small farming* – farm adjustment focuses on people-centred development towards self-reliance through creating a system of resilience basing on "Sufficiency Economy Philosophy"; and
- *Progressive farming* – farm adjustment focuses on increased farmers' competitiveness through crop diversification in response to changes in world demand.

Risk management policy for the agricultural sector

Considering risks involved in the agricultural production, one might perceive that the poorer producers, the higher risks should involved in their production process, marketing and thus, farm income. This paper will discuss the role of "Sufficiency Economy Philosophy" to play on risk management for poor farmers in the process of sustainable development.

Sufficiency Economy is a philosophy initiated by H.M. the King to lead lives attaining happiness. The philosophy shows the guideline for a person to live and practice based on the "middle path" in line with one's potentiality. "Sufficiency" should consist of 3 attributes:

- moderation;
- reasonableness; and
- immunity.

In the context of agriculture, the 3 attributes embedded in sufficiency economy could be explained as follows:

- moderation in expenditure using level income as the determinant of the degrees of expending. As a result of moderate spending, the farmer will have money left for saving;
- reasonableness to produce and consume with rationality and responsibility as having a good planning in production. With mixed farming, the farmer can generate production activities all year round; natural resources (soil and water) could be optimally used; diversified food production thus could be available to feed farm household throughout the year; and
- immunity as to eschew excessive risk-taking from mono-cropping, money shortage, indebtedness, food safety and environmental deterioration.

The application of Sufficiency Economy to agriculture could be through an example model of "The New Theory" approach. It is a practical way initiated by H.M. the King to help farmers manage their resources efficiently and sustainably. It serves a development guideline for small farmers to achieve self sufficiency.

The approach promotes maximization of land use and income diversification through division of individual family farm land at the ratio of 30:30:30:10 to support a variety of economic activities. Conceptually, the farm land could be allocated at this ratio respectively for a pond, paddy fields, fruit and vegetable gardens, and other purposes such as housing, etc.

The Ministry of Agriculture and Cooperatives (MOAC) had implemented the "New Theory" project during 1998-2001, having 10,000 farmers from all regions participated in the project. A taskforce was established to study the project performance after its termination:

- it was found that the majority of samples have appropriately used their land and water resources efficiently.

The division of land use has generated labour use all year round, and therefore reduced risks from weather and price variations. Farmers have positive attitude toward the project since they have the chance of learning more about production and marketing information, as well as creating network among rural community.

Nevertheless, it could be concluded that the key to alleviate poverty through structural adjustment should start from:

- firstly, the farmers/farm household members to work hard and being self-reliance;
- secondly, the appropriate production model/activities following the Sufficiency Economy principle; and
- lastly, the availability of supplementary water resource is very important factor that facilitates the success of structural adjustment in agricultural sector.

5. Experiences with agricultural structural adjustment – New Zealand

Paper presented by:
Mr. Gavin Forrest
Rural Affairs Co-ordinator, Sector Performance
Ministry of Agriculture and Forestry, New Zealand

The context for reform: Farming and the New Zealand economy prior to 1984

Background

New Zealand has a total land area of 29 million hectares, covering a broad range of latitude extending 1,600 kilometres from the subtropical top of the North Island to the cool southern end of the South Island. It is relatively isolated with its closest neighbour, Australia, approximately 1,600 kilometres to the west.

Only one quarter of New Zealand is less than two hundred metres above sea level and the landscape are dominated by hill country and snow-capped mountain ranges. Because of its location and its fifteen thousand kilometres of coastline, New Zealand has a temperate, westerly maritime climate. Annual rainfall ranges from 380 millimetres in drier eastern areas, to over 8,000 millimetres in the wettest areas of the West Coast. Although there are regional contrasts, sustained climatic extremes are rare, making New Zealand ideally suited to pastoral farming as the climate generally allows grass growth all year round.

New Zealand has a population of 4.3 million people and is a highly urbanised society. About 86 percent of the population live in towns and cities occupying about 3 percent of the land area[17]. New Zealand has a large area of productive land. About half of New Zealand's total land area (26.9 million hectares) is used for primary production (agriculture, horticulture and forestry):

- for this reason farming and, more latterly, forestry has become a specialist sector, concentrating on production for export.

More than 90 percent of New Zealand's agricultural production and about 70 percent of New Zealand's annual forest harvest (round-wood equivalent) is exported. Agriculture and forestry generates about 66 percent of New Zealand's merchandise exports, or 50 percent of New Zealand's exports, including services. Agriculture and forestry (excluding fishing, but including input supply, processing, transport, wholesale retail and food processing) accounts for almost 16 percent of New Zealand's gross domestic product.

[17] Source: Statistics New Zealand - Urban includes towns and cities with a residential of 1,000 people and over

New Zealand production has been traditionally centred on sheep and cattle, and the production of sheep meat, beef, wool and dairy produce. In recent years there has been an expansion of dairy farming, forestry and horticulture largely at the expense of sheep farming. Cereal crops are grown on a limited scale, mainly to supply the home markets.

The New Zealand economy before 1984

Agricultural production has been a significant component of New Zealand's economy and export income for most of the relatively short history of European settlement. New Zealand used to export most of its agricultural produce to the United Kingdom, first wool for textile mills and then in 1882, with the advent of refrigerated ships (designed in New Zealand), dairy products and meat. New Zealand emerged from the Second World War with its industrial and agricultural capacities intact, in a world facing major shortages of agricultural goods.

The country grasped these opportunities so effectively that in the early 1950s New Zealand was considered to be one of the richest countries in the world on a per capita basis. New Zealand's primary industries were also boosted by the demand for wool and meat created by the Korean War (1950 -1953) and later the Suez Crisis (1956).

However this prosperity of the agricultural sector was threatened by far-reaching events in the 1970s. New Zealand was hard hit by the oil shocks of the 1970's and its loss of preferential access to its traditional (and key) export market when Britain joined the European community in 1972. Many other countries increased their rates of protection for agricultural products, which prevented New Zealand primary producers from utilising the comparative advantage they had previously relied upon.

In response to this situation (and to protect consumers and producers from these events) the New Zealand government raised barriers to manufactured imports and intensified its intervention in the economy. This increasingly led to inefficiencies that multiplied and deepened. Largely to compensate farmers for artificially high input prices and low input prices resulting from these measures an extensive system of subsidies to New Zealand farmers was gradually developed.

Assistance to agriculture

Initially New Zealand government policies were inclined to favour the manufacturing industries over agriculture. In the 1930s there was a move to establish manufacturing industries by the introduction of a licensing system, and the imposition of steep tariffs on imported goods.

Until the late 1960s there was no significant government support for agriculture. After this time protectionist measures for agriculture began to parallel those implemented for the manufacturing industries thirty years earlier. Over the period from 1980–1984 the level of government assistance increased considerably, fuelled by a general slump in world commodity prices.

Price support and stabilisation programmes for farm returns

Farm gate prices were affected by government interventions including product price support and stabilisation programmes under which the Government paid the difference between the market and the minimum price. These were historically administered by producer and marketing boards who received low interest loans from the government.

Although the stabilisation schemes were in place from 1976 they were not used to any marked extent until 1978 when the Government created a new stabilisation scheme for pastoral agriculture known as the Supplementary Minimum Price (SMP) scheme. SMPs where completely financed by public funds and cost the New Zealand taxpayer $505 million by 1983/84.

These measures encouraged farmers to focus on products, which had higher levels of government support. As a result there was an increase in lamb and wool production at the expense of beef and dairying. The New Zealand taxpayer-subsidised overproduction of sheep products was however, unwanted in the international market place.

Subsidies on farm inputs

Subsidisation of the transport and application of fertiliser began in the 1930s. Other incentive schemes were available, including a generous subsidised depreciation rate, granted in the first year for buying new machinery, equipment, and for the construction of farmhouses for employees. Capital inputs were subsidised by a reduced interest rate from the, government-owned, Rural Bank of New Zealand.

Assistance to increase farm output

To increase investment in the farming sector, the government introduced the *Livestock Incentive Scheme* and the *Land Development and Encouragement Loans*. These programmes, which targeted the pastoral sector, were designed to increase the number of stock reserved for production and encourage the development of marginal or unimproved land, into pasture.

Overall effects of government support on New Zealand farming

Government support had a profound affect on New Zealand farming. Farmers became highly dependant on government support, so much so, that by 1983 the level of support was equivalent to 35.5 percent of farmers' gross farm income. Farmers became very vulnerable to any unpredictable changes in government policy.

The increasing levels of support altered farm practices. Higher support for sheep resulted in an overproduction of wool and lambs – approximately one million lambs were rendered down for fertiliser as there was no market for them. As beef farming received less support, less beef was produced, even when market demand was high, this led to a loss of export opportunities.

The government's encouragement of pastoral farming on poorer, marginal, land resulted in environmental problems, such as, erosion. Farmers used more fertiliser than was necessary (due to considerable subsidies) and also bought more plant and equipment than was required. Forestry was initially encouraged by a grant, but was later disadvantaged by changes in taxation and support for land clearance and sheep and beef farming.

The servicing sector, including the ports, meat processing plants and transport sector became less efficient as a result of the general perception that farmers could afford to pay and, as was the case with ports and NZ Railways, protection from open competition. Support was capitalised into land values which led to an increase in prices, and created a debt problem as farmers borrowed against this equity using government subsidy-supported income.

New Zealand farmers were insulated from international prices for both the costs of farming inputs used and farm products. As a consequence New Zealand's farming systems were not in tune with either international requirements or prices. This was an unsustainable situation for a country that exported around eighty percent of its agricultural output. The farmers were always paid, regardless of what they produced, as the government carried the risk of poor decisions. This had negative repercussions for farmers, foresters, taxpayers, and the country as a whole.

New Zealand was once proud of its comparative advantage in international agricultural markets. But it lost its international competitiveness largely as a result of government interventions.

The need for government reforms: The state of the New Zealand economy by 1984

The government's steadily increasing level of intervention in the economy since the late 1960s had led to a situation that was unsustainable. By 31 March 1984 a number of acute problems had to be addressed:

- the *fiscal deficit* (including debt servicing) had reached eleven percent of GDP (2 – 4 percent from 1960 to 1975);
- a *Balance of payments deficit* close to 8 percent of GDP;
- a growing *public debt* problem, borrowing used to support consumption and an overvalued exchange rate (Public debt increased 17 percent in the previous year and servicing costs accounting for 14 percent of Government expenditure);
- an overvalued (fixed) *exchange rate* – in support of government's goal to control inflation. The Reserve Bank was forced to borrow externally;
- double digit *inflation* from December 1973 to March 1983 – artificially controlled by a general wage and price freeze imposed from June 1982 until February 1984 and reintroduced for three months in July 1984;
- *low growth* – average increase in real GDP 0.6 percent from 1975 to 1984 (2.7 percent OECD average).

The reforms of 1984 onwards: What was done

In July 1984 there was a change in Government following a snap election called by the leader of the then National Government. To redress the economic crisis faced by New Zealand, the new Labour Government instituted wide-ranging and radical reforms in both the macroeconomic and microeconomic areas.

In the economy as a whole, reforms were implemented with the aim of generating sustained economic growth and promoting efficiency. The philosophy underpinning the reforms was that of 'the level playing field'.

The previous tendency of successive governments to select 'favourites' (for example the manufacturing sector) to benefit from considerable subsidies and tax incentives, was no longer acceptable. On the level playing field all sectors would compete equally and market forces, instead of government favouritism, would determine which sectors would succeed.

All sectors of the economy were affected. One of the first acts of the new government was to announce a twenty percent devaluation of the New Zealand dollar, along with the removal of controls on all lending and deposit rates. The wage freeze was lifted in October 1984 and the price freeze lifted in November 1984 Exchange controls were removed in December 1984 and the New Zealand dollar was floated in 1985.

Broad-based tax reforms were introduced to decrease the government deficit. This involved raising average tax rates, simplifying personal tax scales and the introduction of a uniform Goods and Services Tax (GST), creating one of the least distorting tax systems in the OECD.

The reforms included economy-wide measures including deregulation of the finance, communications, and transport sectors. Tariffs were lowered and the import licensing system was removed. Free trade with Australia expanded under the Closer Economic Relations agreement (CER) that eventually included most services and almost all goods.

The government began to disengage from commercial enterprises and reduced in size through the disestablishment of government departments and establishment of 24 state-owned enterprises (SOEs) which included transport, finance, tourism, forestry, broadcasting, utilities and service industries. SOEs were subject to the same competition laws applying to private enterprises and made accountable on a profit and loss basis.

The reforms required the central bank, the Reserve Bank of New Zealand, to set a clear single monetary policy with the aim of achieving and maintaining price stability to reduce the persistently high levels of inflation. This led to the establishment of the Reserve Bank as an independent institution in 1990.

Labour reforms were also implemented, some years after the first changes. A new Employment Contracts Act took effect in 1991, effectively deregulating the labour market with the introduction of individual employment contracts. This development allowed employers and their staff more choice in determining terms of employment.

New legislation affecting the environment was introduced in 1991 in the form of the Resource Management Act to encourage (amongst other matters) land mangers to take into account third party effects of their actions and to promote sustainable farming and forestry practices.

Reform measures relating directly to agriculture

The agriculture sector was one of the first affected by the reform process. In 1984 the Government announced the disbandment of output price assistance for agricultural products. Fertiliser subsidies were abolished, as were investment and land development concessions and interest concessions for Producer Board. In addition, taxation concessions for farmers were withdrawn.

Capital development subsidies, input subsidies, and free government services for farmers, such as, inspections and advisory assistance, were removed. Research and development progressed to an equal footing with other forms of investment. Farmers were now fully exposed to world market forces without the protection of Government interventions. Before the reforms government interventions had absorbed market risk and insulated farmers from unpredictable market conditions.

The transition

New Zealand's experience shows that rapid removal of government support measures when the farming sector relies on this assistance impacts heavily on both rural communities and on the nation as a whole.

The sheep and beef sector was most seriously affected by the reform policies as it had previously received the greatest levels of support. While sheep and beef farm incomes doubled briefly in the 1984-85 period this was largely due to a favourable exchange rate and good climatic conditions, rather than as a direct result of the government reforms.

When the NZ dollar was floated in March 1985 it appreciated significantly largely due to a surge in interest rates (previously kept at artificially low levels). These factors coupled with a fall in international prices for meat and dairy products and the removal of subsidies had a significant effect on farmers' incomes. Land prices, which had previously peaked in 1982, fell about 50%.

The weakened financial position of New Zealand farmers seriously impacted on rural towns and businesses, as farmers reduced expenditure on new plant and equipment, and ceased work on non-essential repairs and farm maintenance. This contributed to employment reduction in associated processing and production industries. Between 1986 and 1991 the number of people employed in dairy product manufacturing, meat processing, slaughtering and food preparation fell by 16 percent.

Rural communities were also affected the restructuring and centralisation of many government and private sector services, such as, post offices, railways and banks, also affected the rural sector. New land development also stopped at this time. The total area of pastureland declined from 14.1 million hectares in 1983, to 13.5 million hectares in 1995. Some newly developed marginal land reverted to indigenous vegetation or was converted to commercial forestry.

The absence of government support measures resulted in farming families taking a self-help approach with one or both partner(s) working off-farm to supplement their income. Many farmers showed their discontentment by marching in protest to Parliament in 1986 giving a clear message to the government that there was considerable opposition to many of the reforms.

The farmers' main representative body, Federated Farmers, were in a difficult position as they had recognised the need for reforms and had advocated for a major reform of the New Zealand economy prior to 1984. They stressed that significant reforms in other sectors of the economy were required such as labour market reform and the removal of protective measures in place for New Zealand manufacturers – however these changes did not take place for several years.

The need for transition programmes

It became apparent that while some farm families could survive the withdrawal of agricultural support by reducing discretionary expenditure and by seeking off-farm income. But these methods were not sufficient for all farmers. The government implemented a number of transition programmes in order to assist the agricultural sector to adjust to a new economic environment determined by the international market:

- in 1986 it introduced a **debt-scheduling proposal**, known as the *Rural Bank Discount Scheme* available to farmers who were experiencing difficulty in meeting their financial

obligations. The Rural Bank wrote off part of their debt, but the subsidised interest rates were raised to market levels. The scheme operated on the understanding that other creditors agreed to a restructuring of the debts of individual farms. This scheme allowed much of the farm debt to be written off and was complemented by the *Conditional Seasonal Finance Guarantee* for other lenders where the Rural Bank was not involved (4,700 farmers involved - $228 million of debt written off);

- an **exit package** (*New Start Grant*) for those who remained heavily in debt and agreed to leave their land. They were given $45,000 and allowed to keep their car and personal possessions. Rural financiers supported this on the grounds that it prevented a more significant fall in land prices through reduced mortgage sales;
- **social welfare payments** for farming families in particular situations to covered minimum cost of living expenses and financial assistance for job seeking;
- assistance was also provided by **local support groups** who provided both social and financial counselling and support (many still exist today);
- partially government-funded **Rural Co-ordinator** service was set up to encourage local responses to opportunities as they arose. Rural coordinators helped in financial counselling and welfare assistance to farmers. This programme proved to be very successful. It also helped initiate the development of a number of non-farm activities in rural areas.

Recovery – profiting from the reforms

It is generally accepted that an economic upturn in the agricultural sector began about three years after the first round of reforms were introduced. Farmers began to recognise the value of the 1984 measures and did not seek a return to assistance programmes. Today the government provides minimal direct support to agriculture and expects the agricultural sector to make its decisions based on international competitive advantages.

The Producer Support Estimates (which measures level of assistance and protection for producers) shows that the level of assistance to New Zealand agriculture compared to other OECD countries is now very low (see Charts 1, 2 and 3).

In late 1988 meat and dairy product prices improved. Farmers terms of exchange strengthened both as a result of the long-awaited benefits from the reforms and improving world market prices for commodities. Since the reforms the real price of farmland has increased, reflecting the improved returns to farming and is now higher than its pre-reform peak.

The pattern of farm output greatly changed since 1984 with sheep numbers dropping back to 40 million in 2006, compared with around 73 million in 1983 (34 million in 1950). There has been a significant increase in dairy cattle numbers (from 3.1 million in 1983 to 5.2 million in 2006) with beef cattle at similar levels today as they were in 1983.

The number of farmed deer farming has increased dramatically from 195,000 in 1983 to nearly 1.6 million in 2006. Land in horticultural has expanded steadily from 95,000 hectares in 1983 to about 120,000 hectares today. However the value of horticultural exports has increased significantly from $115 million in 1980 to over $2.3 billion in 2005, a rise from 4.4 to 7.4 percent of merchandise exports (see Chart 4).

Sheep and beef production had seen a shift from quantity to quality with lambing percentages increasing by 25 percent compared with the levels recorded for 1984–1985, while average carcass

rates have increased by a quarter. Sheep meat prices had significant increased by 2002 but have since fallen back, partly as a result of the high value of the New Zealand dollar and static prices in New Zealand's key European and US markets.

Key lessons learned form the New Zealand experience

New Zealand presents a case study of a country moving from a highly regulated economy to one of the most deregulated in the Western World. While operating in a deregulated economy is not easy few would argue for a return to the old days.

It is considered that New Zealand agriculture would have benefited from better sequencing of the reforms. Farmers' cooperation in the agricultural reform programme was strengthened by plans to remove tariffs on imported inputs. However the lowering of tariffs did not proceed as quickly as the removal of agricultural support, so farmers were affected by falling outputs years earlier than they were to experience the benefits of labour deregulation in 1990s.

New Zealand's example showed deregulation should be 'multi-sectoral' and proceed uniformly across the economy. If such an approach had been implemented, farmers may not have been seen as the only contributing group and this might have lessened resentment towards the reforms. In addition, farmers would have received more immediate gains from a more general deregulation.

While there are advantages in removing all support, it was found that people and industries are more amenable to progressively small reductions in support, than having it totally removed. While it is prudent to plan for the total abolishment of support, from a political point of view it is advisable not to announce it beforehand.

Deregulation can proceed unilaterally – quantitative research undertaken by the OECD shows that the benefits of agricultural liberalisation are maximised when countries deregulate multilaterally, New Zealand's experience is that in the long run reform does confer substantial benefits on the liberalising economy as the reformed sectors become more market-orientated and less of a burden on natural resources.

Adjustments to, and benefits from, reform are not instantaneous, while New Zealand farmers responded quickly by taking appropriate steps to increase the profitability of their farms, the return of economic growth, and reduction of general unemployment took longer to achieve.

The need for transition measures showed that certain assistance measures may be required (for a limited time) to support household consumption.

The New Zealand reform experience renewed the self-respect of farmers through their independence from government support. They are no longer reliable on the public purse and this has increased their credibility in the eyes of the general public.

New Zealand has achieved more respect internationally in its efforts to promote fair trade.

New Zealand has shown that agricultural market support does not lead to sustainable farm and rural incomes. When a government insulates its agricultural sector from trends in the international market, inefficiencies and a loss of competitiveness are likely to occur.

Protection and support measures merely delay the inevitable adjustments the rural sector needs to make in response to changes in the use of resources, keeping current with technological developments, and social trends.

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Tables and charts

Table 1: New Zealand fiscal costs of support in pastoral agriculture
Average for each period in NZ$ million

June years	*1980–84*	*1985–90*	*1991–95*	*1996–98*
Support prices	209	47	0	0
Fertiliser subsidy	49	9	0	0
Interest transfers	136	186	1	0
Marketing board debt	132	158	0	0
Tax transfers	73	54	1	0
Inspection services	49	46	5.5	3
Advisory services	10	13	1	0
Research services	38	54	59	61
Quarantine services	27	34	34.5	48
Other	49	76	13.5	3
Total	**772**	**677**	**115.5**	**115**
Average farm GDP	2,356	3,619	4,660	5,052
Transfers as % of farm GDP	32.7	18.7	2.5	2.3

Source: NZ Ministry of Agriculture and Forestry

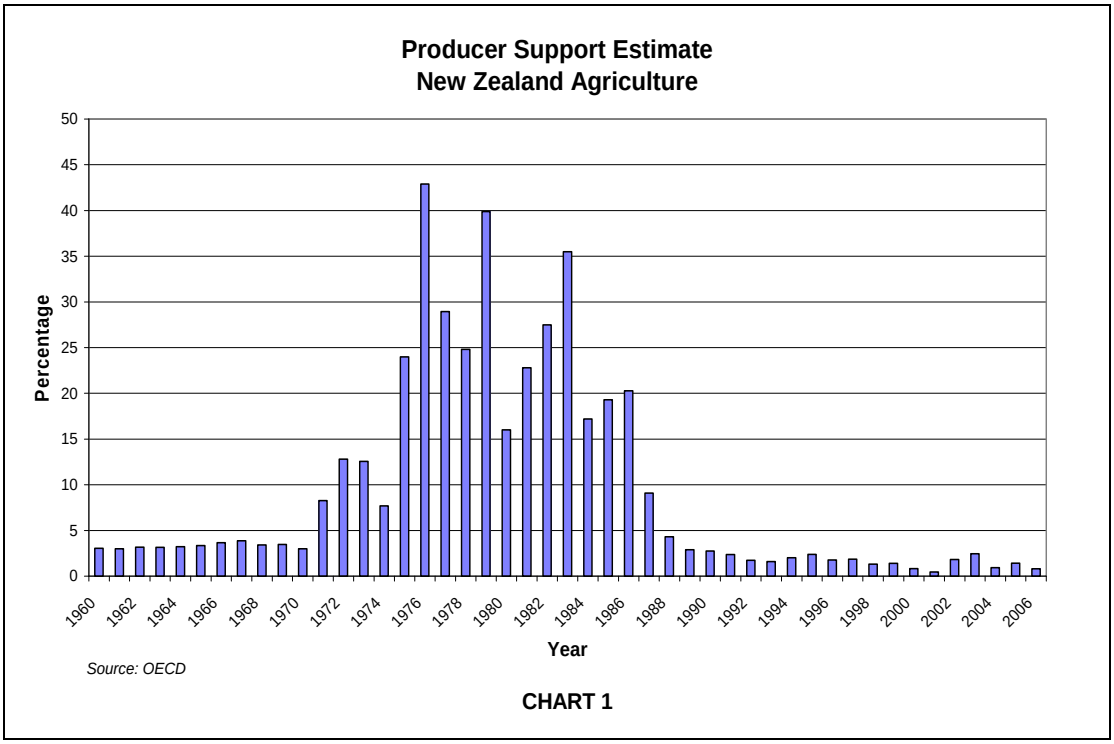
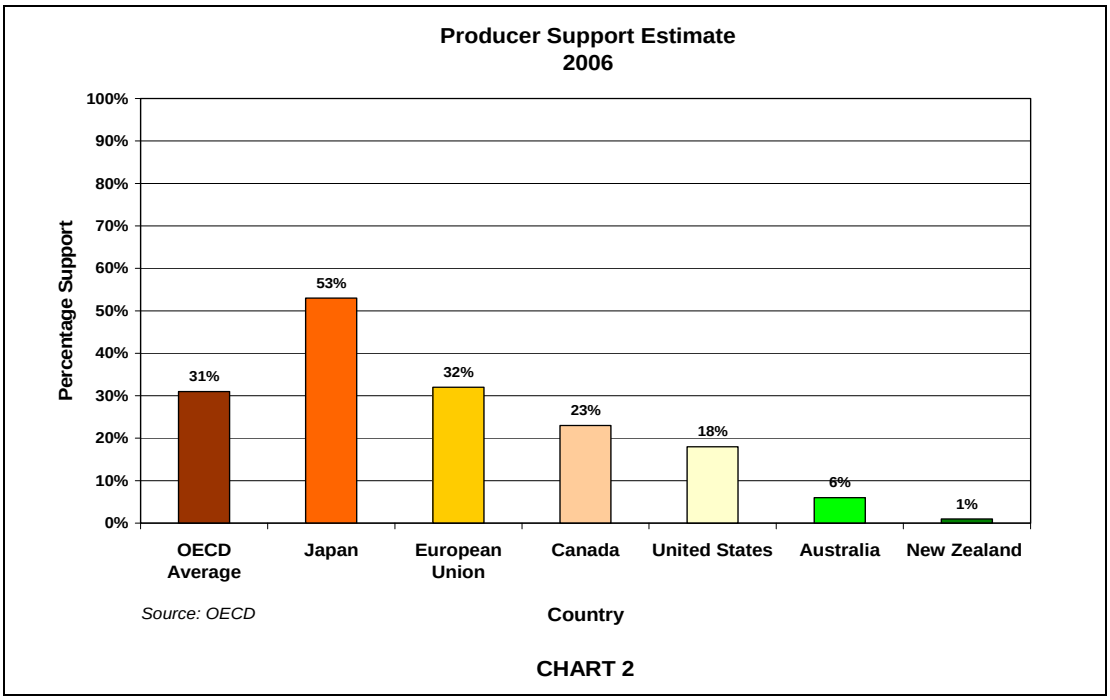
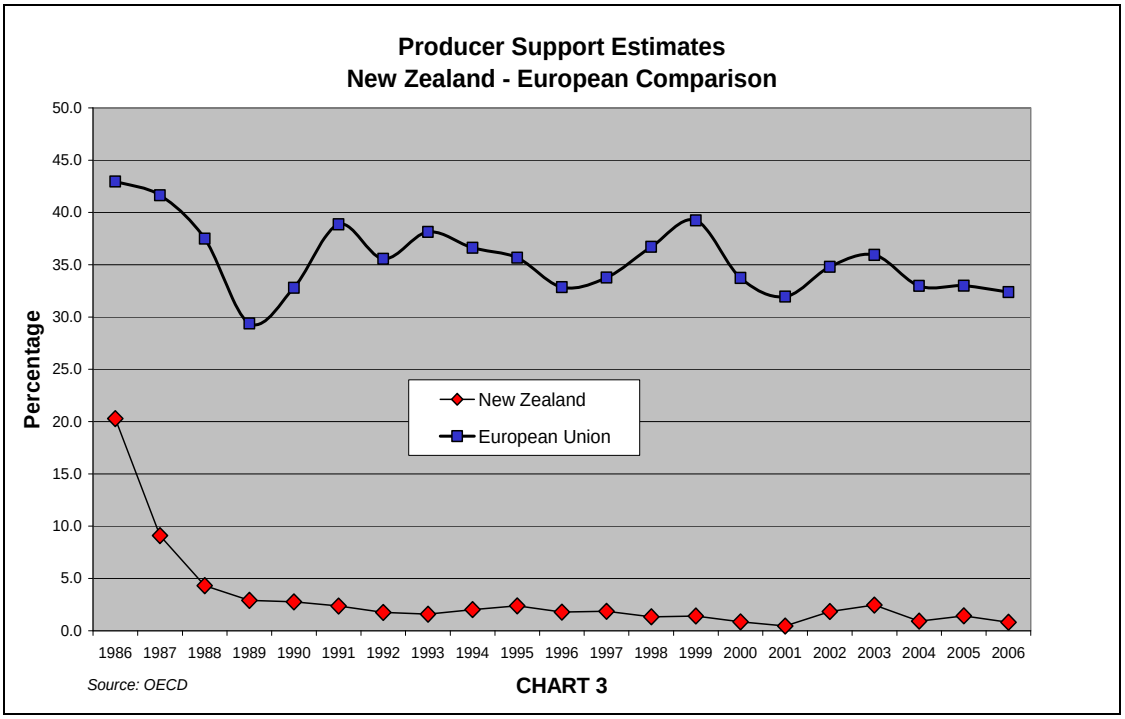


CHART 1



Source: OECD

CHART 2



Source: OECD

CHART 3

6. Experiences with agricultural structural adjustment – Chile

Ms. Cecilia Rojas Le-Bert
International Affairs Officer, Office of Agricultural Policies and Studies,
Ministry of Agriculture, Chile

Chilean experience on structural adjustment policies

The agricultural sector has undergone two significant structural adjustment reforms:

- the land reform; and
- the trade liberalising reform.

Land reform took place between 1964 and 1973 and it was conducted through a specialized agency. CORA expropriated about 10 million hectares, an area equivalent to 59% of Chile's agricultural farmland. A more significant reform, introduced to the whole economy, was trade liberalization. At present this process has been consolidated.

So, the country's economic growth since the restoration of democracy in 1990 has been the fastest in the region (Latin America), although it has not been as significant as the rates recorded in East Asia.

The support of Chile's strong economic performance has been a set of thorough macroeconomic management and institutional and structural reforms that have led to the emergence of a market-oriented economy. The economy has become progressively more open, with a ratio of exports plus imports to GDP of about 75% that is higher than anywhere except East Asia.

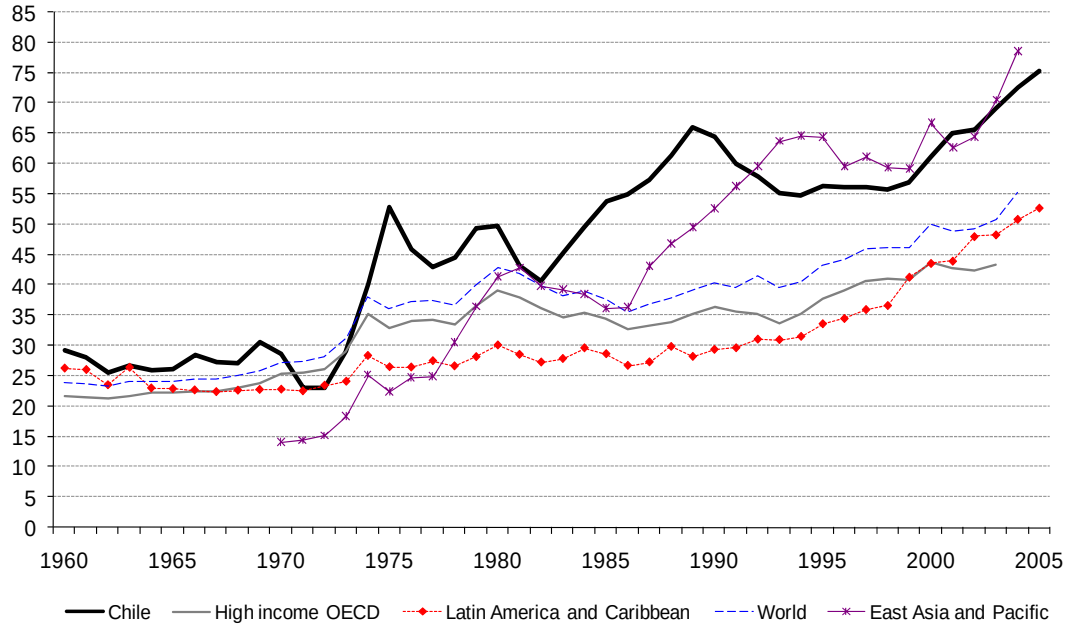
Said reform began in 1974, when Chile adopted unilaterally an open trade regime characterized by low and uniform import tariffs with few exchange or trade controls. The government has continued to open the country's markets, first by unilaterally lowering tariffs and then by concluding a series of free trade agreements:

- the uniform tariff system was maintained and currently stands at 6%.

Since 1990, an active policy of negotiating Free Trade Agreements (FTAs) and Economic Complementation Agreements (ECAs) has been pursued as a complement to unilateral liberalisation:

- this has lowered the average tariff levied by Chile still further, to just 2%;
- it means that applied tariffs taking account of preferences are typically much lower than the MFN average.

Chart 1: Trade openness (% GDP 1960-2005)



Note: For each country, openness is measured as the sum of exports and imports as a ratio of GDP. The country group measures are the simple average of all countries in that group.
Source: World Bank, World Development Indicators, 2007.

Agriculture's role in Chilean economy

The agricultural sector has played a key role in Chile's economic success. For much of the past 20 years, agricultural growth has matched growth in the rest of the economy, enabling the sector's share of national income to remain roughly constant and defying the general experience that agriculture's importance to the economy declines with economic development.

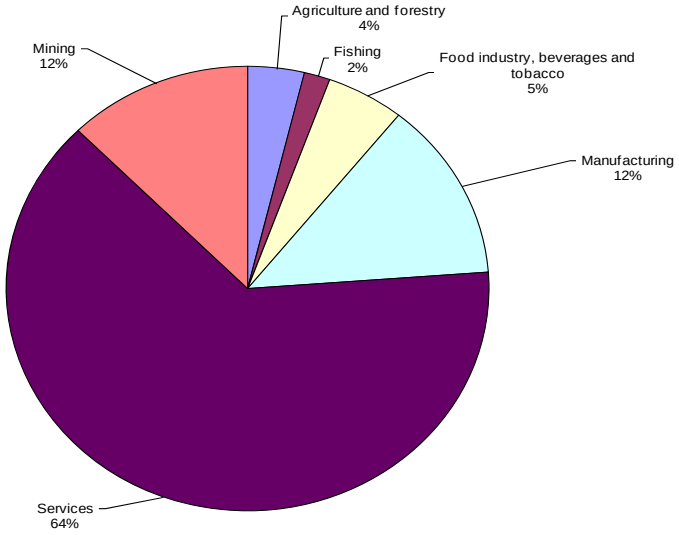
Since the mid-1990s, agriculture's share of GDP has declined to just under 4%, a ratio that is lower than the average in countries with similar per capita incomes, but understates the sector's relative importance once the relatively high degree of value added is considered.

Trade

Agriculture makes an important contribution to Chile's overall trade balance, with agro-food exports accounting for 15% of all exports last year (see table below). This share is considerably higher than the cumulative share of agriculture and the food industry in GDP – which has averaged 9% over the past 10 years, or 11% if fisheries are included.

Agro-food exports have grown much more rapidly than agro-food imports in recent years, with the net surplus reaching nearly US$8 billion in 2007. This growth has come from developing new markets abroad and successfully expanding sales of high value items such as fresh fruits, wine and agro-processed foods (including meat of swine and poultry).

Chart 2: Shares of GDP by sector (2002-2005)

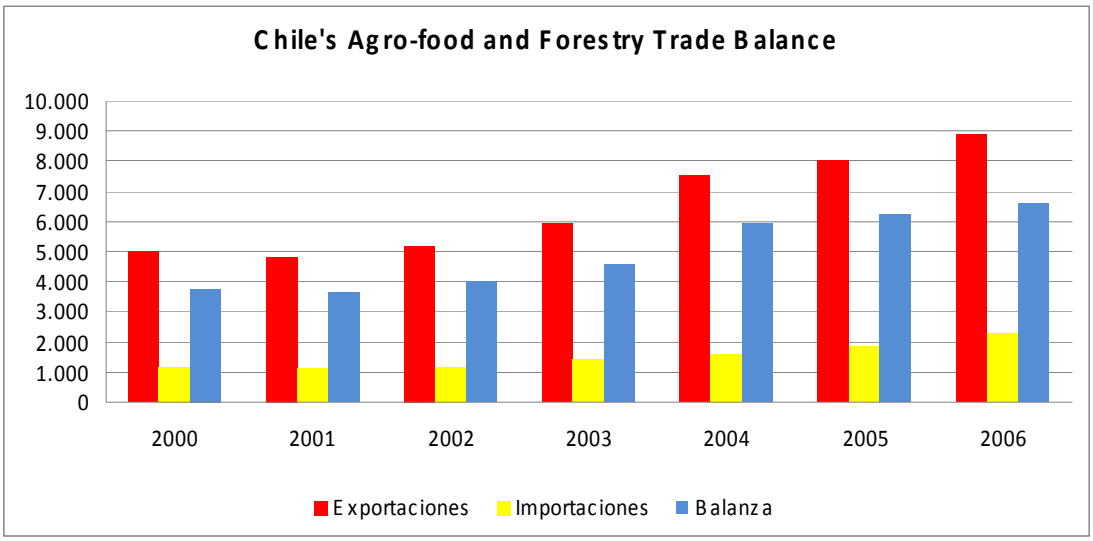


Source: Central Bank of Chile, 2007

Table 1: Chile's agro-food and forestry trade and total trade (2000-2006)

	Value (million US$)						
	2000	2001	2002	2003	2004	2005	2006
Total Exports	18.415	17.668	17.676	20.627	31.460	39.247	57.738
Total Imports	16.970	15.288	15.790	16.981	22.454	29.915	34.912
Trade balance	1.446	2.381	1.886	3.647	9.006	9.332	22.825
Agro-food and forestry exports	4.976	4.785	5.185	5.936	7.515	8.043	8.891
Agro-food exports	2.681	2.629	2.878	3.316	3.904	4.175	4.631
Livestock exports	192	266	285	406	600	775	789
Forestry exports	2.103	1.891	2.022	2.214	3.011	3.093	3.471
Agro-food and forestry imports	1.201	1.133	1.203	1.397	1.606	1.836	2.295
Agro-food imports	845	808	874	980	1.111	1.188	1.627
Livestock imports	283	244	246	339	386	519	510
Forestry imports	73	80	83	78	109	129	158
Agro-food and forestry trade balance	3.775	3.653	3.982	4.539	5.908	6.207	6.596
Agro-food balance	1.836	1.821	2.004	2.336	2.793	2.988	3.004
Livestock balance	-91	21	39	67	214	256	279
Forestry balance	2.030	1.810	1.939	2.135	2.901	2.964	3.313

Source: Prepared by ODEPA.



Explaining the growth of Chile's agro-food exports

Particular cases

There are some study case from specialists, Agosin and Bravo Ortega (2006), that consider three successes from the Chilean experience, in an attempt to discern the relative importance of these various factors and delineate the role played by the state. The three cases they consider are wine, blueberries and pork meat.

Wine started to be exported in significant volumes in the mid-1980s and is now a major industry with annual exports of around USD 900 million. The majority of these exports go to European markets. The growth of blueberry and pork meat exports is a more recent phenomenon.

Blueberries, which are not traditionally consumed domestically, emerged as a significant export in the mid-1990s, with exports growing to an annual average of USD 100 million, mostly destined for the United States. Pork exports have developed even more prodigiously, rising from less than USD 6 million in 1996 to over USD 300 million in 2005. The majority of these exports are taken by Japan and Korea.

A key point made by Agosin and Bravo Ortega is that these exports have grown in the absence of an active government policy. The role of government has been to facilitate rather than direct economic activity. In addition, they note a number of specific features behind each export growth story.

In the case of wine these contributory factors include the adoption of foreign technologies, the switch to stainless steel vats that enabled Chilean producers to bring the quality of their wines up to international standards, the co-ordinating activities of industrial associations and a general growth in world demand.

The growth in blueberry exports has taken place as part of a remarkable diversification in fresh fruit exports, which draws on favourable natural conditions including a mild Mediterranean climate and off-season production compared with the northern hemisphere. The main exporting companies (Hortifrut and Vital Berry) have joint ventures in the United States and strong links to specialised traders.

Foreign investment played an important role in the development of pork exports. The main buyer, Japan's Nippon Meat, started prospecting for suppliers when FMD hit two of its main suppliers, Denmark and Chinese Taipei. This company buys from the dominant supplier, Agrosuper, which has a vertically integrated structure and low labour costs, which enables it to meet specific demands – notably for speciality cuts – from Asian markets.

All three products have benefited from favourable natural resource, macroeconomic and trading conditions. In each case, however, the government has played an important facilitating role. While Chile benefits from naturally favourable SPS conditions by virtue of its physical isolation, SAG has played an important role in protecting this endowment, especially in the case of blueberries and pork.

CORFO has sponsored the setting up of producer associations that can assist producers in meeting the quality requirements of foreign markets. This was particularly important in the early stages of the boom in wine exports. Fundación Chile helped establish a viable export concern for blueberries, helping to compensate for weak private sector R&D and an infant venture capital industry. More generally, PROCHILE's promotion activities are considered to have had a significant effect on Chile's exports of food and wine.

Finally, the conclusion of trade agreements has had an important impact in each case, with exports of wine to the EU benefiting from a specific agreement within the Economic Association Agreement, and exports of blueberries to the United States and of pork to Japan and Korea covered by free trade agreements.

Producers have argued that the scope of government initiatives is too limited, and that they are typically obliged to pick up the costs of government services, such as inspection. Nevertheless, the government's focus on providing public goods and correcting clear cases of market failure, as opposed to trying to pick sectoral winners, has shown a valuable return.

Institutional arrangements for agricultural policies in Chile

Policies implemented by the Ministry of Agriculture (MINAGRI)

The Ministry of Agriculture (MINAGRI) is responsible for the design, implementation, administration and regulation of national policies related to agriculture, livestock, forestry, food, and rural development. MINAGRI is organised into an under-secretariat and ten agencies:

- five agencies (INIA, FIA, INFOR, FUCOA, and CIREN) are managed through the under-secretariat (SUBSE);
- the other five – INDAP, SAG, CONAF, CNR, and ODEPA – are decentralised institutions with individual budgets.

Under-Secretariat of Agriculture (SUBSE)

SUBSE's mission is to contribute to improving the competitiveness, sustainability and fairness of the agriculture and forestry sectors, by means of an efficient organisation of the Ministry of Agriculture in terms of articulating, monitoring and co-ordinating the policies, programmes and projects that are executed directly by the ministerial agencies or implemented by agreements with other institutions.

National Institute for Agricultural Development (INDAP)

INDAP is the main agency providing support to small-scale agriculture. Its aim is to improve the competitiveness and market orientation of Family Agriculture (Agricultura Familiar Campesina, AFC). In order to carry out this mandate the institute contributes to financing the investments and operational capital of small-scale producers. It also co-finances technical assistance and management programmes for smallholders, and implements general assistance programmes for poor farmers.

Agriculture and Livestock Service (SAG)

SAG is responsible for protecting, maintaining, and improving the sanitary conditions of livestock and agricultural production; protecting, preserving, and improving the natural renewable resources used in agriculture; and controlling the inputs and outputs for agricultural production, according to legal regulations and standards.

National Forest Service (CONAF)

CONAF's mission is to preserve and increase the country's forestry resources. CONAF manages a programme for recovering eroded soils and promotes the creation of a renewable resource for small and medium-sized owners of forest areas. At the same time, it controls the enforcement of regulations concerning the use of forests. It also has a forest-fire control programme and manages a national system of protected areas.

National Irrigation Commission (CNR)

CNR co-ordinates all the institutions with irrigation activities, and implements its own irrigation and drainage policies, programmes and projects. It also manages the funds available for promoting the construction of private irrigation and drainage projects; and promotes public actions oriented to agricultural development and training in the areas that benefit from irrigation projects.

Office of Agricultural Policies and Studies (ODEPA)

ODEPA is a centralised public institution that provides and maintains regional, national and international information useful for policy making. ODEPA advises the Ministry of Agriculture on policies related to production and international trade. It also provides services such as legal advice, evaluation and monitoring of the budget of the Ministry's agencies, and co-ordination of international technical assistance and co-operation programmes.

National Institute for Agricultural Research (INIA)

INIA's mandate is to create, adapt and transfer technological knowledge. Its actions are framed within a Research and Development concept, implying that research projects are started with a final, achievable product in mind. Nevertheless, it also performs some research projects in basic science.

Foundation for Agrarian Innovation (FIA)

FIA promotes innovation in Chilean agriculture by financing the development of programmes and projects that are oriented to the industrial transformation and commercialisation of agricultural and forestry products. It also promotes the co-ordination of sectoral innovation efforts, and provides extension services.

Forestry Research Institute of Chile (INFOR)

INFOR's mission is to carry out research projects, prepare statistics, and transfer scientific and technological knowledge related to the sustainable use of forest ecosystems, the management of its resources and the commercialisation of its products. It supports the development of small and medium-sized forest owners, and technological innovation among small and medium-sized wood-product companies.

Foundation for Agricultural Communication, Training and Culture (FUCOA)

FUCOA is in charge of the communications of the Ministry of Agriculture and its agencies.
Natural Resources Information Centre (Centro de Información de Recursos Naturales, CIREN)
CIREN's function is to compile, update, maintain and integrate statistics and cartographic information related to the country's natural resources; and to provide timely and useful information for the analysis of different sub-sectors.

Policies by MINAGRI but implemented by Non-MINAGRI agencies

PROCHILE

PROCHILE is part of DIRECON (Directorate for International Economic Relations) and its mission is to promote Chilean exports. For this purpose, PROCHILE undertakes studies to

- guide and train entrepreneurs; supplies international trade information;
- organises and participates in international trade shows and missions for entrepreneurs;
- develops programmes for incorporating small and medium-sized companies into international trade; and
- administers funds for the promotion of exports.

Economic Development Agency (CORFO)

CORFO's mission is to promote the "development" of national production. It promotes management improvements, innovation, the generation of capital, and the creation of new businesses.

Fundación Chile

Fundación Chile is a private non-profit organisation that introduces innovations and develops human resources in key areas of the Chilean economy.

Policies implemented by other ministries

These are agencies with programmes that reach the agriculture sector, but where resources do not originate from MINAGRI.

Social and Solidarity Investment Fund (FOSIS)

FOSIS is a decentralised public agency under the supervision of the President of the Republic, with whom it interacts through the Ministry of Planning (MIDEPLAN). FOSIS finances activities that contribute to poverty reduction.

SENCE, Servicio Nacional de Capacitación y Empleo

SENCE is a decentralised public agency that promotes the competitiveness of enterprises and individuals through training programmes.

CONADI Corporación Nacional de Desarrollo Indígena – MIDEPLAN – Ministry of Planning

CONADI is part of MIDEPLAN and promotes, co-ordinates and executes state initiatives for the development of indigenous people.

Ministry of Public Works (MOP)

MOP implements a number of agricultural infrastructure and irrigation projects.

In a more schematic way, the following table links the institutions with their respective on-going programmes and instruments.

Table 2: Chile's agro-food institutions and programs

Policies	Institution	Main programmes
Productivity improvements and skills development programmes	INDAP, CORFO	1. Services for the development of productive and entrepreneurial capacities, INDAP *(Servicios Desarrollo de Capacidades Productivas y Empresariales)*
		2. Incentives for the development of agricultural investment, INDAP*(Incentivos Mejoramiento y Desarrollo de Inversiones)*
		3. Subsidies for the diversification of economic-productive activities, INDAP (Apoyo a la diversificación de actividades económico-productivas MYPE)
		4. Livestock improvement programme, INDAP (*Desarrollo y Tecnificacion Ganaderia*)

		5. Transfers from MINAGRI to CORFO to be used in instruments like PROFO, PDP, FAT *(Transferencias de MINAGRI a CORFO*)
		6. CORFO own budget allocated in agriculture through instruments like PROFO, PDP, FAT, PIR (*Presupuesto propio de CORFO*)
The Soil Recovery Programme	INDAP, SAG	Soil Recovery Programme (*Programa para la Recuperación de Suelos Degradados*) INDAP & SAG
Irrigation subsidies and spending	CNR, MOP, INDAP, CORFO	1. Law 18.450 (*Ley 18.450*)
		2. Irrigation Development of Poor Communities, CNR (*Programa Desarrollo del Riego en Comunas Pobres*)
		3. Studies for the Feasibility of Irrigation Works (*Estudios y Programas de irrigación*), CNR
		4. Large-scale irrigation works (*Grandes obras de irrigación*) MOP
		5. Associative Irrigation Works Programme (*Programa de Riego Asociativo*) INDAP
		6. Irrigation Programme (*Programa de Irrigación*) PI/PIR, CORFO
Rural development programmes	INDAP, CONADI	1. Services for the Development of Poor Areas (*Servicios de Fomento para Sectores Especiales*) INDAP
		2. Local rural communities development services (Servicio de Desarrollo Local en Comunidades Rurales) PRODESAL, INDAP
		3. Indigenous Development Programme/Orígenes Programme, (*Programa Desarrollo Indígena*) INDAP
		4. Support for the Training of Rural Women (*Programa de Formación y Capacitación para Mujeres Rurale*s) PRODEMU, INDAP
		5. Support for the improvement of productive activities in region IV (Proyecto de Desarrollo Rural para Comunidades Campesinas IV Región) PRODECOP IV-INDAP
		6. Support for the improvement of productive activities in regions VI, VII, VIII (Proyecto de Desarrollo de Comunas Pobres del Secano Regiones VI,VII y VIII) PRODECOP SECANO, INDAP
		7. Support for the family agricultural production (*Bono de Producción Agrícola Familiar*), INDAP
		8. Fondo de Desarrollo Indígena (*Subsidies for Agricultural Productive Activities*), CONADI
		9. Fund for Indigenous Land and Water, Land & Water rights purchases, (*Fondo de Tierras y Aguas*), CONADI
R&D, Training, Extension	INIA, FIA, etc.	1. National Institute of Agricultural Research (*Instituto de Investigaciones Agropecuarias*) INIA
		2. Foundation for Agrarian Innovation (Fundacion para la Innovacion Agraria) FIA
		3. Fundación-Chile (*Fundación-Chile*)

		4. Forestry Research Institute (*Instituto Forestal*) INFOR
		5. Natural Resources Information Centre (*Centro de Información de Recursos Naturales*) CIREN
		6. Fund for agricultural communication, training and culture (*Fundación de comunicaciones del Agro*) FUCOA
		7. Institute of rural education (*Instituto de Educación Rural*) IER
Animal & plant health, standards	SAG	1. Fund for the Improvement of Sanitary Conditions (*Fondo de Mejoramiento del Patrimonio Sanitario*)
		2. Agricultural and Forestry Export Inspection Programme, (*Inspección de exportaciones agrícolas, forestales, pecuarias*)
		3. Export Certification Programmes, (*Certificación de exportaciones agrícolas y pecuarias*)
		4. Border Control Inspections (*Programas de controles fronterizos*)
		5. Foot and Mouth Disease Transfers Fiebre Aftosa (transferencia)
		6. Brucellosis Bovine Transfer (*Brucelosis Bovina transferencias*)
		7. Fruit Fly Transfers (*Mosca de la fruta transferencias*)
		8. Seed Programme Transfers (*Programa semillas transferencia*)
		9. Fruit Mediterranean Fly Control Region Arica (*Control integrado mosca del mediterráneo Región de Arica*)
		10. Livestock development programme-animal health programme (*Programa de desarrollo ganadero sanidad animal*)
		11. Plant Health Programme (*Programa de sanidad vegetal*)
		12. Seed Programme, labs (*Programa de semillas*)
		13. Food Safety Programme, (*Programa de inocuidad de productos agrícolas*)
		14. Genetic Improvement Programme (*Programa de mejoramiento genético*)
		15. Foot and Mouth Disease Control (*Vigilancia fiebre aftosa*)
		16. Brucellosis Bovine Control (*Vigilancia brucelosis bovina*)
		17. Fruit Fly Control (*Vigilancia mosca de la fruta*)
		18. Plant Health Committee of Southern Areas (*Comité de sanidad vegetal del Cono Sur*)
		19. Labs for Residuals Control (*Laboratorios de control de residuos*)
		20. Reference Labs EU (*Laboratorio de referencia Unión Europea*)
		21. Homologation Standards EU (*Homologación*

		normativas Unión Europea)
Marketing and promotion	PROCHILE	1. Agricultural export promotion fund (*Fondo de Promoción de Exportaciones Silvoagropecuarias*) PROCHILE/DIRECON/ MINAGRI
		2. Export promotion for family agriculture (*Internacionalización de la Agricultura Familiar Campesina*) INTERPA, MINAGRI
Others	INDAP & SAG	1. Emergencies (*Emergencias*) INDAP, SAG, Under-Secretariat
		2. Subsidy estimation in INDAP's credit (*Estimación del subsidio en el crédito de IND*AP)

Concluding comments

There are some key issues it would be of utmost interest for Chile to share with other member economies. These include:

- policy instruments designed for SMEs, that is, how to extend to this segment benefits coming from the export growth process;
- technology and innovation systems; and
- adjustment and modernization of the Ministry of Agriculture and its agencies.

7. Experiences with agricultural structural adjustment – Malaysia

Mr. Muhammad Salimi Sajari
Deputy Under-Secretary,
Strategic Planning & International Division,
Ministry of Agriculture and Agro-Based Industry, Malaysia

Introduction

This paper presents the efforts taken by the Malaysian Government in aligning and adapting its agricultural policy to enable the farmers to remain resilient in the face of global competitiveness

The agriculture sector in Malaysia consists of two distinctive subsectors namely the Industrial Commodity subsector and the agro-food subsector. The Ministry of Plantation and Primary Industry oversee the development of the Industrial Commodity such as oil palm, rubber and cocoa. The development of the agro-food subsector comes under the purview of the Ministry of Agriculture & Agro-Based Industry.

Thus in discussing the subject of food supply and demand, this paper will confine its in-depth discussion to the agro-food subsector, while a brief bird eye view of the agriculture sector as a whole will also be highlighted.

Current agriculture development

The agriculture sector had been Malaysia's mainstay economic activity for the first two decades since independent contributing 46% to the country's GDP. But during the 1970's, development policies and strategies shifted from agriculture to manufacturing and later on to services.

The shift to manufacturing and services over the past 2 decades represents the government's strategy and approach to create jobs, restructure society, reduce poverty and boost the overall economy in line with the aspirations of the New Economic Policy.

With the accelerated growth in the manufacturing and services sector, the interest and attention on the agriculture sector faded gradually and eventually, besides industrial commodities plantation, agro-food farming activity was given low priority.

The 1997 Monetary Crisis shed new light on the agriculture sector as the country's leadership was awaken by the fact that over dependence on imported raw material for the manufacturing sector will open the country's industry to vagaries. From that point onwards, the development of the agro-food sector was again given prominent. Various programs to fully utilize the abundant land and natural resources in the country to produce sufficient raw material was undertaken.

Industrialising the agriculture sector

The government is fully aware that promoting the agricultural sector as the Third Engine of Growth and putting it back in the forefront of the country's economic growth will require a Herculean task. Given the sector's low priority over the years it means there is a need to leapfrog by not just one or two steps, but several steps to take the lead to stimulate growth in the sector.

This entails complete transformation of the agriculture sector to resolve many vital long-standing issues that have hindered the sector from becoming competitive and attractive to investors. It warrants a paradigm shift in approach towards agriculture in terms of planning, implementation, projects and programs. It also involves changing the mindset of farmers and fishermen.

With the strategic intend in transforming the agro-food sector, the Ministry of Agriculture and Agro-Based Industry has drawn up exciting new plans and innovative ways to transform this traditional sector into a modern enterprise through the "New Agriculture" approach which was highlighted in the country's 9th five years development plan known as the Ninth Malaysia Plan (2006-2010).

Greater emphasis will be given on commercialization of the agro-food related activities, to encourage greater use of modern technologies and techniques to transform traditional farming into commercially viable businesses.

Following the commitment and strong support of the country's leadership, it is intended that the agriculture sector will emerge as a strong contributor to national economic development. Future farmers will not only be modern but also successful. Just like in the some developed countries, farmers are rich and wealthy landowners with the ability to reap good harvest produce machines and go into upstream and downstream processing of farm produce.

The development of the sector was being specifically addressed in the Ninth Malaysia Plan (9th MP - 2006-2010). This plan also outlined, the policy thrust and the future direction of the agro-food sector which addresses the implementation of agricultural activity along the value chain, besides allocating substantial amount of development funding in modernizing this sector.

Various programs with the objectives of enhancing activities along the supply chain are being carried out under the 9th MP based on the policy thrust as follows:

1. *Increasing agricultural production including by venturing into new sources of growth with greater private sector participation.*
   Various efforts such as land consolidation, new land development, replanting and rehabilitation, greater utilization of farm mechanism as well as high yielding clones/ breeds and good agronomic practices towards productivity are being carried out. Government linked companies and the private sector also being encouraged in increasing its agricultural investments through better support and incentives measures.

2. *Expanding agro-based processing activities and product diversification.*
   Through increasing utilization of agricultural produce in the production of high value added products as well as processing activities.

3. *Strengthening marketing and global networking.*
   Improvement in marketing delivery services efficiency and strengthening of global network through strategic alliances, including strengthening of the traditional markets and diversifying into new markets.

4. *Enhancing incomes of smallholders, farmers and fishermen.*
   Measures are also being taken to increase incomes of smallholders, farmers and fishermen through productivity improvements within the agricultural sub sectors as well as through various value adding activities.

5. *Improving the service delivery system.*
   The needs of target groups are being identified and various supporting services such as extension, marketing, credit facility etc, in enhancing the productivity and addressing the farmers' needs are being implemented.

Conclusion

Leveraging on the comparative advantage posses, there is a huge potential in developing the agro-food sector in Malaysia as a new source of growth. By putting in place various initiatives and programs in supporting the development of this sector it is our nation's ambition to position Malaysia as one of the main agro-food producer in the world, supplying high quality raw material and nutritious food for the world consumption.

8. OECD views on adjustment policies

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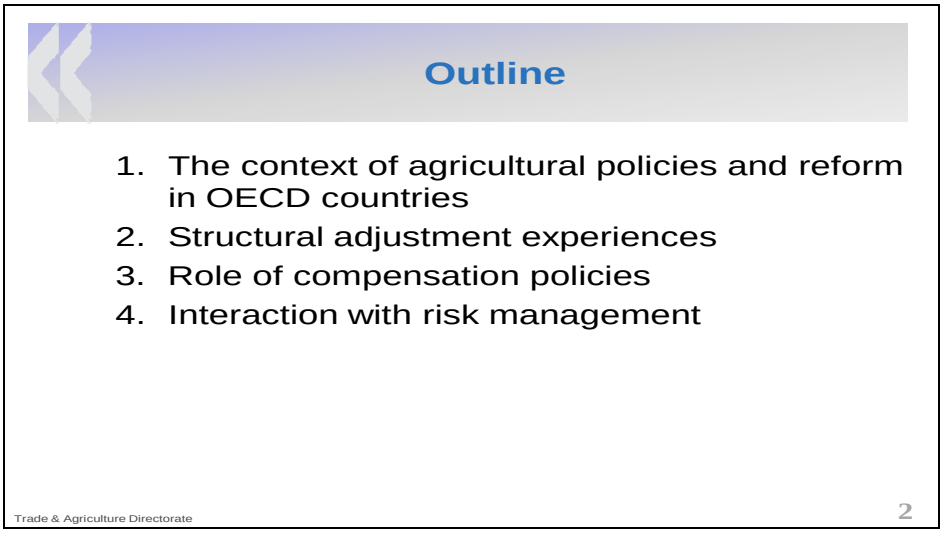

What is the OECD?

- **Groups 30 countries – all democratic, market economies**
- **Provides statistics, economic and social data**
- **Analyses and forecasts economic developments**
- **Researches social change and evolving patterns in trade, environment, agriculture, technology, fiscal policy and more.**

Helps governments to

- **Compare policy experiences**
- **Seek answers to common problems**
- **Identify good practice**
- **Co-ordinate domestic and international policies**

Trade & Agriculture Directorate 4

1. OECD Agricultural Policy Reform Principles

- Agricultural Policy Reform is in the OECD agenda: Ministerial communiqués of 1987 (and 1998):
- "The long term objective is to allow market signals to influence, by way of progressive and concerted reduction of agricultural support … the orientation of agricultural production"
- "Policy measures… should be… targeted to specific outcomes and as far as possible decoupled"

Trade & Agriculture Directorate 5

Agricultural Policy Support in OECD: PSEs?

Support to producers (Producer Support Estimate, PSE)

A1) Market price support (MPS): Qs * (Ps - Pw)

Budgetary payments (based implementation criteria):

A2) Payments based on Output

B) Payments based on input use

C) Payments based on current A/An/R/I, production required

D) Payments based on non-current A/An/R/I, production required

E) Payments based on non-current A/An/R/I, production not required

F) Payments based on non-commodity criteria

G) Miscellaneous Payments

A/An/R/I = Area, Animal numbers, Receipts or Income

General services to the sector (GSSE)

R&D, schools, inspection, infrastructure, marketing/promotion, public stockholding, miscellaneous

Total support (TSE) = PSE + GSSE + Consumer subsidies

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Support Indicators – Level

- Producer Support Estimate
  - %PSE – PSE as a share of gross farm receipts
- Total support Estimate
  - %TSE – TSE as share of GDP

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Medición de los apoyos domésticos: OMC y OCDE

In WTO

Aggregate Measure of Support (AMS):
- Market Price Support
- Budgetary outlays
- Revenue forgone

de minimis

Special & Differential Treatment

Green Box ("minimal distorting")

Blue Box ("production limiting")

In OECD

Producer Support Estimate (PSE):
- Market Price Support
- Budgetary Payments

General Services Support Estimate (GSSE)

Consumer Support Estimate (CSE)

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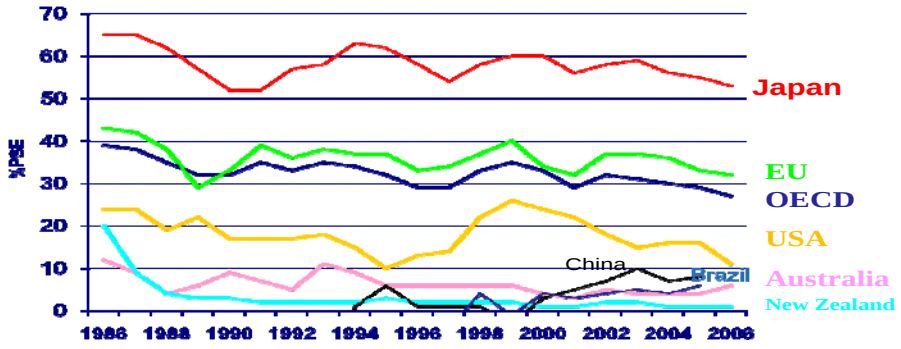
%PSE: producer support as % of farm receipts``



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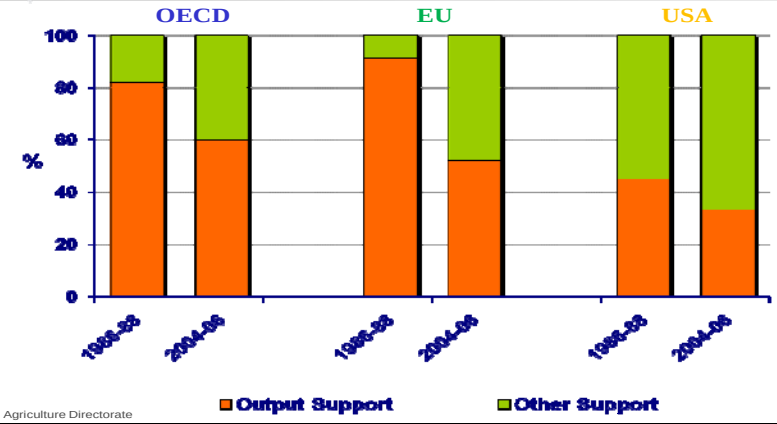
Changes in PSE composition



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2. Structural Adjustment Policies

- OECD work has centred on adjustment policies accompanying policy reform initiatives
- Three types of programs
  - Programs to assist producers to exit the industry and / or to diversify into non-agricultural activities
  - Programs trying to raise the stock and quality of human, material and social capital of farming to improve competitiveness
  - Programs trying to do both
- Main approach: sharing experiences

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Policies including both exit and competitiveness strategies

- Australia:
  - Dairy Industry, 2000
  - Pork industry after relaxation of quarantine barriers, 1999
  - Sugar Industry after tariff elimination, 2004
- Ireland
  - Early retirement and installation aid schemes, since 1992

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Policies to assist Exit

- US, NAFTA Implementation Act to assist workers loosing their jobs because of new trade, 1993
- Australia's Farm family Start Scheme, oriented to low income farmers that cannot borrow, 1999
- Early retirement

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Policies to improve competitiveness

- Turkey Agricultural reform Implementation Project (2001-04): Product diversification and restructuring
- Australian lamb industry assistance, 1999
- EU's Tobacco policy: quota buy-back scheme, 1998

More "permanent" schemes should not be considered as adjustment measures

- Korea calf stabilization scheme, 2001
- Iceland adjustmen policy for horticulture

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Recommendations for Good Practices: Trade and Structural Adjustment Project TSAP

- Rely, whenever possible, on **generally available measures**: social security and tax system
- Facilitate adjustment through **general economic policies**:
  - Macroeconomic stability,
  - Sound labour market policies,
  - Regulation and competition environment
  - Institutional and Governance framework
  - Free trade policies

Trade & Agriculture Directorate 15

Recommendations TSAP: Targeted adjustment measures

- Ensure that **targeted adjustment measures**, if they are necessary, are:
  - Time-bound, with a clear exit strategy
  - Decoupled from production
  - Aimed at reintegrating displaced workers into workforce
  - Compatible with general safety net arrangements
  - Cost effective
  - Transparent and accountable

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Some findings on structural adjustment policies in agriculture

- Reform packages offer sometimes support that is conditional on continuing production:
  - **Such measure may impede or slow down adjustment**
  - "Compensation" payments that are permanent and/or coupled to production are not "adjustment" measures
- Actions should be designed to **trigger the potential of individual actors to adjust**, not reducing their choice
- Successful adjustment to reform requires agents believe it is irreversible: **transparency and credibility**
- Experience shows that **farmers capacity to adjust** is sometimes underestimated

Trade & Agriculture Directorate 17

Adjustment policies should:

- be well **targeted** to specific aims and beneficiaries,
- be **decoupled** from production
- when designing several programmes they should be mutually **consistent**
- be **time-bound** to avoid they prevent the adjustment they are supposed to facilitate
- have a clear **exit component**: enabling those that are uncompetitive to exit with lump sum payments conditional on leaving, integrating in economy-wide safety nets, skill enhancement…
- avoid encouragement to diversify into supported activities
- avoid unintended beneficiaries or overcompensation

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3. The role of Compensation

- Compensation policies are monetary transfers to a targeted group that has been made worse off as a result of a policy reform.

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Rationale for compensation

- The economic rational is weaker:
  - Social choice related with equity of fairness
  - Government obligation to compensate wealth losses: the idea of government "taking".
  - Political economy making potential Pareto improvements, becoming actual.

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Some experiences on compensation

- Australian Dairy reform, 2000
- Netherland limitations on the pig herd, 1998
- Sweden Agricultural Policy reforms 1989-95
- US Changes in the support programs for peanuts, 2002
- EU 1992?

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Some guidelines on Compensation

- Need of accuracy in assessing impacts of reform to identify looser and avoid overcompensation
- Opportunity to revise distribution of support
- Minimise distortions (OECD reform principles)
- They are given during a defined period
- They should facilitate and not prevent reform and structural adjustment
- Compensation for relatively distorting policies can be cheaper
- Compensation in the past has been neither certain in removing calls for additional transfers nor inexpensive

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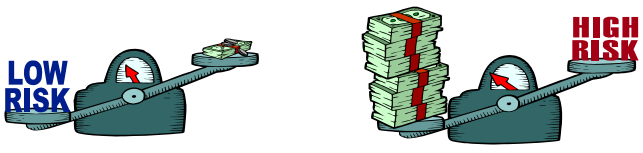
4. Risk management Policies

- Risk management is part of a business strategy and good entrepreneurship
- Risk management policies should not eliminate the "opportunity" that may be linked to any potential risk
- A "catastrophe" can play a triggering role in structural adjustment

Trade & Agriculture Directorate 23

Risk is not always "bad"

- Some agents –including farmers- can benefit from risk
- Risk and higher returns as driving forces of good entrepreneurship



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Rationale for policy action

Efficiency

- MARKET FAILURE
- Improving efficiency in agriculture and the economy

Equity

- Government may decide to help farmers in situations of economic or social distress.
- But… the criterion should be "poor" not "farmer" and refer to all farm household income…

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Guidelines on risk management (1)

- Strategies to reduce income risk depend on the characteristics of risk and require an integrated set of tools and instruments
- The role for the government in risk management is:
  - to provide a sound business environment with competitive markets and clear regulations
  - to facilitate the development of market mechanisms
  - when markets fail, to provide instruments according to reform principles
- Need for information and assessment:
  - Providing information and training
  - Assess the existence of Market Failure and/or specify equity concerns
  - Sharing of experiences

Trade & Agriculture Directorate 26

Guidelines on risk management (2)

- Reform principles: intervention should be
  - effective and cost-efficient,
  - minimally distorting,
  - delivered in a transparent, decoupled and targeted way
  - **without**
    - undermining the development of private/market solutions,
    - or **hindering the adjustment capacity of the sector**, or
    - encouraging rent seeking (moral hazard/adverse selection)
- This seems not to be the case in most OECD countries
  - policies have contradictory objectives
  - most support is linked to production
  - ad hoc intervention gives farmers contradictory incentives

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To conclude

- Structural adjustment policies:
  - If possible generally available horizontal measures
  - … if necessary targeted: exit and competitiveness… but they need to be time bound and decoupled…
- Account for the context of high levels of support in some OECD countries.
- Compensation is not structural adjustment
- Risk management policies should not hinder the adjustment capacity o farmers

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APEC Seminar on "Sharing Experiences of Structural Adjustment Policies in the Agricultural Sector"
Sydney, 12-14- March 2008

Thank You

www.oecd.org/tad

Jesus.Anton@oecd.org

Trade & Agriculture Directorate 31

9. Experiences with agricultural structural adjustment – Mexico

Paper presented by:
Ms. Adriana Rodriguez Romero
Director of Support to International Trade Negotiations
Agricultural Marketing Support and Services Agency
Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food, Mexico

Overview

To fully understand agricultural policy reform in Mexico, it is useful to first take a look at some of the basic economic indicators of the country and its agricultural sector. Mexico is a large country with almost 2 million square kilometers (km) of land[18]. It is one of the largest countries in America. Of these, more than 70 per cent could be used in agriculture and livestock activities[19].

The diversity of climates allows for the production of a great variety of crops. In Mexico you can find every sort of crops: from grains & oilseeds to tropical and exotic fruits. For example, Mexico has the first place in production and exports of avocado, and 3rd place of both export and production of chilly peppers[20].

Around 6 million people work in agricultural activities. This figure represents around 6% of total population, and 13% of the population in the labor force[21]. Also, more than a half of the territory accounts for social property; three quarters of grains and oilseed producers have parcels of less than 5 hectares. Thus, we have an extreme fragmentation in the land market, which historically, has been one of the main obstacles to accomplish economies of scale in the sector.

We can also observe heterogeneity in marketing capacity among Mexican farmers. On one side, we have small farmers who basically produce for self-consumption. On the other side, there are highly productive commercial farmers who have access to advanced technology and who market their products not only in the domestic market, but in the international markets as well.

We can better appreciate these differences by looking at one example: In Chiapas, one of the poorest states in the country, an average corn producer has a productivity of around 2.2 tons per hectare, whereas in Sinaloa, commercial farmers have yields of 9.7 tons per hectare[22] (similar to the average yield in the USA).

[18] INEGI, Información Geográfica, 2006.
[19] SAGARPA. Programa Sectorial de Desarrollo Agropecuario y Pesquero 2007-2012, 2007.
[20] FAO. 2006 for production; 2005, for exports.
[21] Based on INEGI, Survey of Employment 2007.
[22] SIAP, data for 2007 autumn-winter season.

Agri-food GDP as a share of Total GDP accounts for 9.6%[23]; the average growth rate has been of 2.0% over the past 28 years, which is slightly below that the average growth of the Mexican economy as a whole, during the same period (INEGI data, 2007).

Evolution of the Mexican Agricultural Policy

Mexican agricultural policy has underwent very significant changes in the last 20 years. These changes are consequence of the deep change in the national economic strategy that started in the mid eighties. During the second half of the 20th Century, Mexico embarked on a series of different economic strategies: from protectionism, represented by the Import Substitution Model, to a Model of Shared Development, to the current Open Market Model.

The Import Substitution Model was characterized by a huge degree of protection to domestic industry through import restrictions and import quotas. In the Shared Development Model, state intervention in the production of the main goods and services was the predominant feature of the economy. Finally, the Open Market Model is characterized by an increasing openness to the flows of international trade and a decreasing role for the State in the economy.

It is important to say that most of these changes occurred in the process of economic reform in Mexico between 1980 and 1994. Trade openness started with the accession to GATT in 1986. At the same time, privatization and the disappearance of obsolete state enterprises was a notable feature of the Mexican economy. These changes demanded a new legal regime. Consequently, new Laws for Foreign Trade, Economic Competition, and Foreign Investment were enacted.

Another important reform took place in 1992 land property rights were reformed. The Article 27 of the Mexican Constitution was changed: before 1992 the State was the legitimate owner of the land and producers could only make use of it. After the reform producers were legally allowed to sell, mortgage, or lease the land. These changes were meant to increase productivity, as well as foreign and domestic investment in agricultural activities.

As part of the trade liberalization process, in 1994 the North America Free Trade Agreement (NAFTA) came into force. One of the most prominent features of NAFTA is that it involves two developed and one developing partners. Within NAFTA, trade flows between Mexico and its main partner were gradually liberalized. NAFTA comprises the whole agricultural sector, whose products' tariffs were gradually reduced in a 15 year span (1994-2008).

Today, Mexico is an economy characterized by its openness to international trade flows. It has an extensive network of Trade Agreements (12 Treaties involving 44 countries) with countries such as Chile (1993), the European Union (2000), and Japan (2005).

From a "visible" hand to a "less visible" one

As the rest of the economy, the agricultural sector has gone from a highly intervened regime – characterized by the existence of trade barriers like import licensing, state enterprises, and guarantee prices – to a market oriented regime.

[23] Includes agriculture, livestock and processed food products .

From 1965 to 1990, purchasing, distribution and importation of twelve basic grains and oilseeds was restricted to a state enterprise called CONASUPO, which intervened in the agricultural markets through the use of guarantee prices and by selling subsidized food to consumers. From 1990 to 1998 the scope of CONASUPO was drastically reduced, going from twelve supported commodities to only two: dry edible beans and maize. Finally, in 1999 CONASUPO was dismantled.

After the disappearance / privatization of public enterprises that intervened in agricultural markets, guarantee prices were eliminated. As a consequence, agricultural producers started to face increasing difficulties to market their products.

Such difficulties arose because, among other causes, up to that moment farmers didn't have enough marketing experience and know-how to sell their crops, and also because there was a lack of public and private infrastructure for crop storage, management and distribution.

Because of such problems, ASERCA (the government agency entitled to offer Support and Services to Agricultural Marketing) was created in 1991. Its main objective was to support the marketing of grains and oilseeds. A Marketing Support Program was established in order to reduce the lack of symmetry shown in the international competition conditions and falling of the international prices as a result of open trade.

These marketing payments defined as the difference between an "agreed" price and an indifference price. Nevertheless, this payment was available only in those states with historical marketing surpluses and supported mainly maize, wheat and sorghum.

Since 2001 the support was paid directly to the producer instead of the market trader as before. The purpose is to create incentives for the producer to respond to market signals. In 2003 ASERCA increased the number of eligible products and the cover was extended to the whole country.

Another important change concerns the way in which the producer receives the support. Now we have a target income program that allows producers to receive the difference between the target income and the market price. Besides the target income program, ASERCA offers some other support programs for marketing, such as the Support for the Acquisition of Financial Hedging.

In 1993 the Direct Support Program for the Country (PROCAMPO) was created. It consists in a per hectare payment based on historical entitlements, decoupled from production and marketing.

Originally, the program was set to last 15 years, covering the period of tariff reductions agreed with the NAFTA partners. Thus, PROCAMPO was an important policy tool to facilitate the transition towards total openness in the NAFTA area.

One of the features of PROCAMPO is that it supports both self-consumption producers –who previously received no support- and large scale farmers. Around 75% of PROCAMPO recipients own less than 5 hectares of land. Furthermore, PROCAMPO has increased the linkage between market signals and the production choices of Mexican farmers. Additionally, PROCAMPO has the advantage of being a Green Box program.

Final Considerations

We have briefly looked at two of the most important programs of current Mexican agricultural policy. It is important to say that there are some other programs to foster the development of the Mexican agricultural sector. Among them, we can mention programs to support Agribusiness, Rural Development, Livestock, Technology Transfer, and Animal and Vegetal Health Programs.

It is also important to highlight the fact that agricultural policy reform in Mexico represents a large improvement over the interventionist and protectionist regime of the past. Reform has increased the linkages between production and marketing decisions through price signals, improving efficiency in the agricultural sector. Nevertheless, there are still big challenges ahead.

10. Experiences with agricultural structural adjustment – Vietnam

Paper presented by:
Mr. Tran Van Cong
and
Mr. Nguyen Anh Minh,
Senior Program Officers
International Cooperation Department
Ministry of Agriculture and Rural Development, Vietnam

The nature of adjustment issues and problems in agriculture

The Vietnam experiences of structural adjustment economy were known by its renovation process "*Doi moi*" performance and initially based on the agricultural adjustment. Its successful transition to a market economy is a complex one of interaction between external shocks, grassroots adaptations and policy initiatives.

The structural changes began in the early 1980s in response to a series of crises that occurred during the early postwar years. It began as a complex process of interactions between grassroots adaptations to economic difficulties and government efforts to manage the process of change. With endowed of natural resources for agricultural development but Vietnam faced with chronic famine. Farm household was not recognized as a crucial element of the economy. Agriculture heavily depended on imported inputs and government subsidies.

At the same time, however, a two-tier price system had developed in the context of goods scarcity that aggravated inflationary pressures. Goods were increasingly diverted from fixed-price central planning channels to the free market where they could be traded at higher prices.

The bureaucratic central planning economy with continued bottlenecks did not deal the domestic situation and adapt with the marketisation, led to the promulgation of the *Doi Moi* in 1986. This was followed by a series of reforms in agriculture and the national economy that effectively ended the system of resource allocation through central. It is seen as a fundamental driving force for agriculture development in Vietnam.

Polices and measures implemented

In 1980s, the period was as of barriers released, overcoming chronic famine problems, largely successful in generating growth in output. Noting that, the early reforms as Instruction No. 100 of the Central Committee Secretariat (1981) considered farm household as an element of the economy, started establishment the product contract with individual household. The Resolution No 10 of the Politburo (1988), on reforming the management of the agricultural economy.

This resolution had a profound impact on agricultural and rural development in Viet Nam as it allocated long-term (15 years) contracts on land to individual farm households and permitted farmers to make all decisions relating to investment, production and marketing of output from their plots. The price reforms of 1989 liberalized all prices including interest rates and the foreign exchange rate. It also eliminated the two-tier price system in agriculture once and for all by eliminating the system of compulsory state procurement of output, which boosted trade and narrowed the gap between international and domestic prices of agricultural inputs and outputs.

The cooperatives lost the dominant role they had played under central planning and many simply disappeared. By reconnecting farmers with the land, giving them reasonable security of tenure and enabling them to trade at market prices, these reforms ensured that farmers could both achieve an adequate return for their investment and work in farm activities. Together with the low capital requirements of agricultural production, this made it possible for agriculture to take off straight away. Agriculture was able to absorb labor displaced by industrial restructuring.

Further reforms in the 1990s, have consolidated these gains of renovation process. A particularly important reform was the 1993 Land Law, which envisaged the issue of legal titles to land-use rights, thereby enabling transfers - whether through inheritance, rental agreements, gift or sale. Supported the Land Law, the Resolution No.5 of Central Party Committee on allocating long-term and stable land to farm households was also issued.

Also in 1993, the government promulgated a range of decrees aimed at improving investment and technological innovation and at institutional reform. Decree 13/CP on March 2, 1993 concerned the establishment and development of extension services to farmers; Decree 14/CP concerned credit for extended agricultural and rural development; Decree 12/CP concerned reform of state-owned agricultural enterprise management.

In 1996, the Law on Cooperatives was approved by the National Assembly, clarifying the role of cooperatives as providers of services to households and establishing a legal framework for cooperatives within a multi-sectoral commercial economy. At the same time state-farm management was being changed into enterprise form (Decision 187, 1999). State-owned farm workers could receive a rice plot, garden and house for a flat rental rate, while processing units were given a flat tax rate on revenue. The objectives of the policies were to increase production efficiency by enhancing investment in new technology and improving cost-effectiveness.

In 2000s, the deeply adjustment changes in agricultural sector, it is period of development of commercial production, increasing economic effectiveness and efficiency, increasing farmer's income, in and rural development, implementation of commitment, strengthen quality control and deeply integration with the world economy.

The reform of the taxation system since 2000 involved a phasing out of the agricultural tax which eased the financial burdens of farmer households. The Land Law was amended in 2001, chiefly to permit foreign investors to acquire land-use rights in an attempt to promote land consolidation in agriculture. Commercial farms have been registered. The followed policies on agriculture such as Resolution 09/NQTW on changing agriculture production structure and Resolution 15NQ/TW, dated 18/3/2002 on promoting rural and agriculture industrialization and modernization.

Land consolidation and agricultural marketing policies are key instruments in agricultural development in the new era of integration. Irrigation fee was phrasing out in 2007. Also emergence of the private enterprise sector since the reforms has been an important development.

A range of policies (laws of fisheries, forestry, water resource management, plant protection, veterinary, agriculture and under law documents, etc.) have been issued align with international regulations in order to adapt with new ear of integration. At present, series of policies on are ongoing to foster agriculture, farmers and rural development, which as dynamics for agricultural development of Vietnam.

Key achievements of the agricultural sector

These reforms in agriculture are clearly a major driving force in Viet Nam's outstanding economic performance in the past decade. It has made great strides towards eliminating poverty, achieved national food security and become a major exporter of agricultural commodities.

Since 1989, Viet Nam had not only achieved national level food security but also become the second biggest rice export in the world. Vietnam is also one of leading export other agricultural products such as coffee, rubber, pepper, cashew nut, tea, fisheries, forest products, etc. There is considerable scope, by improving the quality and processing standards of Vietnamese products, to gain further market share.

Viet Nam has been one of the world's fastest growing economies in the past more than 20 years (7-9 percent per annum GDP growth, 3.5-4 percent agricultural GDP growth). As a result of the reforms, the household is now the main stakeholder in agriculture with almost 14 million households deriving over 70 percent of their income from farming, especially commercial farms are developing in 2000s, commercial farms and private enterprises have begun to play a role.

Agricultural productivity has risen substantially during the Doi Moi period. Average output of cereals per hectare from 1990 to 1994 was 3.2 tonnes (paddy equivalent), rising to 3.8 tonnes in 1995 to 1998 and 5 tonnes in 2000 to 2007.

New technologies have been fast developed and applied in production, processing and other activities in the agricultural chain. The use of high-yielding varieties is also spreading. Mechanization, although on the increase, irrigation and land preparation are the most common type of machinery in use in Viet Nam instead of draft power.

There has been a widespread use of IPM, ICM systems. GAP, GMP, HACCP, quality control and other advanced methods are widely developed. Cooperatives have the potential to play an important role in providing services to farmers, especially those with potential to develop into commercial farming ventures, and the government has made an effort to reform them into more business-oriented entities compared with their previous bureaucratic roles.

The private enterprise sector since the reforms has also been an important development and a great development. This sector is making rapid gains in terms of its production, providing inputs, services as well as marketing in both domestic and export of agricultural products.

The expansion of fisheries (including aquaculture) has provided the main contribution to structural change in the agriculture GDP. Within the agriculture, the share of livestock has increased while the proportion of crops has been declined. Forestry has proved less amenable to reform to date.

There have been significant regional changes in structure as commercialization proceeds, with the development of specialized regions that focus less on rice production and more on cash crops, aquaculture and livestock. These zones tend to be more successful where they emerge from market forces.

Within the rural sector, structural change has proceeded rather quickly. Rural industrialization and diversification have taken off. There has been relatively change in the proportion of off-farm households in the rural areas, suggesting that rural diversification there is starting to take off. This pattern is also reflected in the distribution of poverty.

Dramatic reduction, from 58 percent in 1993 to 8.3 percent in 2006 (new poverty line 18percent), and it was 14.7 percent in 2007. Income diversification presented the best possibilities for many farmers to obtain higher incomes. Rural infrastructure has upgraded, 94 percent of households use electricity, all communes have motorways to the central, schools, clinics etc. Rural welfare and facilities are improved.

In conclusion, the agriculture sector has demonstrated a remarkable response to the economic reforms introduced from the 1980s onwards. Not only has agriculture grown rapidly, it has also underpinned the success of the rest of the economy. Production, investment and marketing decisions have been transferred to farmers and other production units, macroeconomic reforms have stabilized inflation and assisted Viet Nam's growing world market integration.

Major lessons and ongoing issues require policy response

At present, Vietnam’s agriculture needs to develop a policy response:

- while industrial development has taken off, output and productivity in agriculture have begun to decelerate;
- expansion of off-farm employment opportunities has not kept pace with growth in the rural population and the labor force;
- poverty reduction is slower in rural than urban areas; widen gap between rural and urban incomes; pressure on land and other natural resources has increased;
- heavy depend on small farm households with small farm size and scattered plots;
- agriculture has experienced decelerating terms of trade for its main export commodities and the main sources of productivity growth seem to be running out of steam.

In addition, the technological level of Vietnamese farming remains labor-intensive and there is considerable scope for improvement through use of new technologies. Extension services, particularly those provided by cooperatives, can be enhanced through adoption of practices more closely linked to farmers' market needs.

Food insecurity persists at high levels in some areas where farmers are unable to shift to more productive activities due to food security policy. Policies on land consolidation and larger farms if commercial farming are continuing to develop. Off-farm employment and underemployment in rural areas is increasing. Rural infrastructure is still obsolete etc. The major lessons are:

- Recognition of the household sector was a crucial element in the success of the reforms. Household economy development is based on social equality ensure, small-farm household’s inner force promoting. The State supports farmers by policies on credit,

agriculture extension, technology transfer, creates chances of accessing market economy; enhances science technology service, power source, irrigation, etc;

- The land reform provided a crucial safety net for the rural population and aided agricultural growth. Land policy on assigning of self-production right, land agglomeration, farm economic development, and agro-product production;
- The rapid expansion private enterprises, which plays an important role in processing and distributing agro-forestry and aquaculture products domestically. They have also been the driving force in penetrating new markets, developing new products and expanding relations with partners all over the world. In the agricultural sector, private enterprises take part in production, processing, distribution and export;
- The reform of agricultural cooperatives represents one of the clearest cases in which path dependence inhibits the implementation of market-oriented reforms. Cooperatives have the potential to play an important role in the rural economy;
- Changing operation form and mechanism of State enterprises in agriculture sector: From a pure state economic form invested by the State offering low business and production effectiveness to the way of partially privatizing State owned enterprises, privatizing ineffective ones by dissolving or selling to private sector;
- Careful target public investment, which is not urban bias driven;
- Poverty reduction is paid more attention, poverty and vulnerable areas are well accommodated in terms of investment and development;
- The very process of export success has generated falling world market prices in major agricultural products. Given that Viet Nam currently fills a market niche for competitive advantage products and low production costs.

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11. Experiences with agricultural structural adjustment – Indonesia

Indonesian structural adjustment policies

Paper presented by:
Ms. Asmawati Ahmad,
Head of Collaboration Division
Indonesian Centre for Agricultural Land Resource Research and Development,
Ministry of Agriculture, Indonesia

Background

Many people have blamed Structural Adjustment Policies (SAP) directed by International Creditor such as World Bank, IMF, IDB and others IFIs have caused economic catastrophe and serious poverty on most of developing countries received the financial aid including Indonesia. It is mentioned that in Indonesia, since world financial crisis on 1997-98, SAP has brought about huge number of Indonesian International debt as well as deterioration of natural resources, public health, agricultural land, children education etc.

However, the crisis has already happened and globalization cannot be suspended. Our leaders commitment is keeping on to implement SAP as settled on several APEC Leaders' Commitment on Structural Reform and Structural Reform Action Plan. All of sectors hopefully support it. We need to look at SAP as an opportunity but not a threat.

As an agrarian country, Indonesian economics have been very much depend on Agricultural sector. Although managed by huge number of small scale subsistence farmers (labour intensive farming systems), Indonesian Agriculture have very significant role in national GDP of Indonesia as provider of national food security, labour absorption (45% on 2002), capital generator and as provider of domestic industrial raw materials. Indonesian population on 2007 is 220 million and on 2030 is estimated will become 425 million.

The economic condition on the last ten years has created great number of agricultural land conversion that cause increase in the number of poor population in the countryside that need to be empowered. Data show that agriculture land conversion to non agriculture on 1999-2002 is 110.000 ha and rice field lands conversion is around 35.000 ha per year (Kompas, 3 March 2008)

With the above condition, Agriculture sector in Indonesia is not only very sensitive toward globalization but also strategic to create sustainable economic development growth in the future (Nainggolan, K., 2005). Because of the capacity of the country, the commitment toward liberalization on trade, investment and facilitation on agriculture aligned by SAP need some domestic adjustment policies so that in the next time, gradual maximum benefit from SAP can be realized.

Policies implemented to address the issues

National food security has been continually become a priority to Indonesian Government. Sensitivity of domestic food crops price (rice, soybean, corn, sugar) toward international market price has caused enormous attention given to the commodities. In order to manage everything related to food security, government appoints a Food Security Agency in one level organisation under the Ministry of Agriculture.

Over time, Government controls price fluctuation, production and availability of food crop commodities in International as well as in domestic market. Most of development programmes under department of agriculture primarily devoted to achieve national food security. For example in research programmes, more than 50% of research activities are related to development of food security issues. Moreover, the solution for quick agriculture land conversion that currently becomes pervasive issue is stressed on the need for food security crops for now and in the future.

The commitment to liberalise agricultural sector also has been put into priority by the Government recently. Investing in the agribusiness sector have got serious attention by providing:

- facilitation such as sound agrarian reform plan, credit for farmers, incentives, better coordination among sectors (Agriculture, Trade, Industry) on generating strategic formulation of agribusiness promotion and facilitation;
- extension workers with entrepreneurial skills for each districts in Indonesia (existing 46.398 extension workers for 70.921 districts on 2008);
- technology through research and development, capacity building to empower agribusiness in marginal areas (Accelerated dissemination Program (PRIMATANI), Poor Farmer's Income Improvement Through Innovation Project (P4 FI3P)), encouraging the banking industry to serve agribusiness and many others policy measures.

Key points on the aim and design of policy measures

The key point of policies measures is to guarantee sustainable food security and sustainable agriculture development growth in Indonesia. In other word, the policies measures are designed to prepare everything needed for next full liberalization so that we can get maximum benefit from SAP. It was approved as on the era of Suharto that fragile condition masked by high development growth cannot hinder the suffering caused by International financial crisis. The key point is that basic needs have to be fulfilled first and then continue to develop further.

Outcomes in the way the industry has adjusted

Indonesian Ministry of Agriculture said (Sinartani, 2008) that currently, because of government support, in countryside there is emerging desire among farmers to return back to agriculture.

Productivity of several main food commodities has better growth in the last four years (rice, corn, sugar, and soybean). Although there is some shock caused by the increase of international oil and food commodities price lately, the influence relatively can be resolved very quickly.

On the effort of various stakeholders in socializing the need for permanent agricultural land as aligned by Agricultural, Fisheries and Forestry Revitalization Programmes of President SBY, the decree for Agriculture Land Protection will be approved by legislation on the end of this year. Even, some provinces, by their initiative, have begun to prepare regulation for that (Java Provinces).

The emergence of agribusiness in country areas has begun to absorb existing unemployment. There are many opportunity of employment absorption in each value chain of agribusiness systems ((Upstream subsystem, On-farm Subsystems, Processing Subsystem, Marketing Subsystem, Supporting Sub System and Services).

The effectiveness of the policies in facilitating adjustment

There are still many problems faced by government in empowering the agricultural sector such as lack of assets that can be converted to capital, failure on legality, lack of education, lack of awareness on multifunctionality of agriculture, lack of budget to funding agriculture commodities subsidies and facilities.

Actually there are around 14 regulations on land reform has been issued by government (various institutions) which was aimed to protect functional changes of agricultural land to non agriculture uses. However, in the implementation there was lack of data and political will and coordination among the related institution such as national agrarian institution (BPN), tax office, Department of agriculture, Department of Public Work. The more important factor is that there was no sanction applied for broken the regulation. Moreover, there have so many unsolved conflicts between farmers and government that need to be resolved.

The lack of effectiveness of regulation on land conversion has not been enough followed by intensification of agricultural land to outside of Jawa.

On-going or emerging adjustment issues that may require a policy response

The emerging agribusiness in agriculture sectors means that Information Networking becomes a crucial for farmers and stakeholders. Information on production, demand, and supply should be accessed easily by farmers or its associations. This must be made available by government.

After approval of Decree on agricultural land protection in the end of this year, as soon as possible the regional regulation should be composed and placed into action and supported by stakeholder's strong commitment, low enforcement, and solid coordination among related institutions.

Facilitation on each subsystem in agribusiness system should be responsibility of the government such as providing infrastructure and fiscal, market restructuring and trade policies, capacity building, strengthening of government, creating formal forum for agribusiness and rural development, etc.

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Impact of trade reform on agricultural production and trade in Indonesian

Paper presented by:
Ms. Sri Hery Susilowati,
Research Officer
Indonesian Centre for Agriculture, Socio Economic and Policy Studies,
Ministry of Agriculture, Indonesia

Background

On international side, trade liberalization under WTO and AFTA arrangements have been prominent issue influencing the sector. The ultimate goals of the trade liberalization implementations are increasing quantity of the world trade, making the economy more efficient, and improving the welfare among the country.

Related to agriculture, Agreement of Agriculture (AoA) was viewed among member countries as the key issue, which covers three main issues, (1) to reduce or eliminate domestic support to producers, (2) to reduce or eliminate export subsidy, and (3) to increase market access through reduction of import tariff and conversion of non-tariff barriers in to tariff barrier.

In the spirit of WTO and AFTA agreements, Indonesian government has conducted a set of deregulation policies including in agriculture sector. Indonesian agricultural sector give responses to the change in the international and domestic trade environments. Tariff rate imposed on the agriculture commodities, except rice and sugar, have been reduced to around 0-5%. Subsidies on agriculture inputs have been phased out since 1998.

For many products, applied tariff rates were substantially below the bound rates that were subject to reduction commitments. In general Indonesia's commitments to agricultural trade reform have had a limited impact on agricultural industries. However, for some products, rice, sugar, and soybeans, have been facing adjustment issues in relation to trade reform.

Bound tariffs and their implementation in Indonesia

Indonesia is one among developing countries that radically liberalized the marketing of its agricultural products, and reduced import tariffs that actually already low. Indonesia applied tariffs much lower than what were bounded in the AoA-WTO agreement. For example in 2002 government applied specific tariffs for rice and sugar Rp. 430/kg and Rp. 700/kg, respectively and the tariffs were changed to 30% and 40% in terms of ad-valorem since 2005.

Meanwhile, the tariffs for other commodities were much lower than these two commodities. Soybeans and milk bounded tariffs were 27 % 210 % in terms of ad-valorem, while their implementations were only 10 % and 5%, respectively. Even in early 2008, import tariff of soybeans and wheat have been removed because world price of those commodities tend to increase continuously and caused the production cost of domestic food industries also increasing.

Table 1. Bound and Applied Tariffs on Agricultural Products in Indonesia, 1994-2007

Commodity	Bounded (%)	Applied tariff in Indonesia (in % or Rp/Kg)					
		1994	1996	1998	2000/01	2002/04	2005/07
Rice	160	0	0	0	Rp.430	Rp.430	450
White Sugar	95	10	0	0	25	Rp. 700	790
Milk/Products	210	5	5	5	5	5	5
Soybeans	27	0	0	0	0	0	10*
Corn	40	0	0	0	0	0	5
Wheat	18	0	0	0	0	0	5*
Meat	50	5	5	5	5	5	5

* Since January 2008 import tariff for those two commodities have been removed.
Source: DGCE, Indonesian Custom Tariff Book, various years.

As shown in Table 1, the applied tariffs of almost all agricultural products were much lower than what were bounded in the AoA-WTO. The low tariff policy has encouraged the high flow of agricultural products from other countries to Indonesia.

As a result, the prices of imported agricultural commodities mostly lower than what they supposed to be. Another impact is that the prices of imported commodities were lower than the domestic one. It implies that the competitiveness of domestically products will be relatively lower.

The impact of trade liberalisation on Indonesian agricultural prices, production and trade

Prices

Due to protection and subsidy given by developed countries to their agricultural products, they sold their agricultural products to world market at a low price, so that the price of food in the world market remain distorted and tended to decline, especially rice, maize, soybeans, sugar, wheat, and meat. This support had a negative impact on the poor farmers who produce food, since they could not compete in both international and domestic markets.

Study conducted by Swastika, et.al (2006) revealed that growth of wholesaler real prices of some commodities in Indonesia during the period of 1998-2004 were negative. The real price of soybean, rice, and milk grew at the rates of -1.87 %, -2.18 %, and -0.94%, respectively. The continuously increasing of the production cost of these three commodities in Indonesia while their prices are declining implies the farmer's welfare is also declining. The situation will be worsening if the import of same commodities is increasing. But since 2005 the prices tend to increase, mainly for soybeans, maize and rice.

Rice in Indonesia is not just a staple food for more than 95 percent of the population, but it is also a strategic political commodity. The dependency on imported rice will hamper food security as well as economic and political stability. Therefore, there should be some incentives for Indonesian farmers to produce more rice, in order to be able to develop sustainable food security.

In general Indonesia's commitments to agricultural trade reform have had a limited impact on agricultural industries. However, for some products such as rice and sugar, have been facing adjustment issues in relation to trade reform. The following describes the trend of rice and sugar production and trade in Indonesia.

Rice Production and Trade

Before the AoA was implemented (1986-1995), harvested area, production, and yield of rice had grown at rates of 1.41 %, 2.44 % and 1.03 % a year respectively. Ten years after AoA implementation WTO (1995-2006), the growth tends to be slower compare to the previous period, namely 0.17 %, 0.62 %, and 0.45 % a year respectively. Harvested area and yield were almost stagnant.

Trend of import, export and trade balance of rice were in the same situation. Ten years before AoA was implemented (1986-1994); Indonesian rice import was on moderate volume, around 24 to 630 thousands ton or 207 thousands ton on average. At the same period, exports were 93 thousands ton on average. Trade balance was on deficit around 115 thousands ton. Although in most years rice trade balance was in the deficit condition, but Indonesia had experienced on surplus in 1986 and 1994.

After the AoA was implemented, rice import significantly increased in 1995, which was fivefold compared to 1994. Meanwhile export was almost zero so trade balance was in high deficit. The high increase of rice import at those year because rice trade was in full liberalized (import tariff was zero and no other import protection) although the bound tariff actually was high at 160%. World price for rice was also relatively low because the price was subsidized by exporter countries. In 1997 rice import declined because of the monetary crisis and made import price (in domestic currency) drastically increased.

In 2001 rice import significantly declined compare to 1999. The declining was mainly because government imposed import tariff Rp.430/kg since 2000. From 1996 up to 2000 import tariff for rice was zero percent. The import policy was also combined with non tariff policy to protect flooding of rice import through import monitoring and import limitation policy.

Sugar Production and Trade

During period of 1969-1973 the import tariff for sugar was zero. It was because domestic sugar production was still small. But during 1974-80 the government imposed tariffs on sugar at 60%. The tariff then was decreased to 10 % at period of 1981-1993. But in 1994 import tariff was reduced to zero percent mainly because of the trade liberalization, although binding tariff for sugar was still high at 95%. With no tariff import, domestic sugar condition in 1994 and 1998 were under high pressure.

During ten years after the AoA had been implemented (1995-2004), sugar production and harvested area had decreased at rate of - 1.5 % and -2.4% a year respectively. The unfavourable condition of sugar industry (mainly in the period of 1997-2000), was due to the liberalization implementation.

The National Logistic Agency (Bulog) had no longer had import monopoly on agriculture products. Import licensing requirements were removed and the private sector was allowed to import products that were previously controlled by the Government. Import at the same period

was very high. Domestic price much lower than import price and could not compete with the import price. These conditions caused six sugar factories were collapse.

To improve this condition, the government implemented import tariff at 25 % for white sugar in 2000. Beside the import tariff policy, Indonesian government promoted policy that aim to control import by making limitation on sugar importing for only producer importer and license importer. The high pressure facing by domestic sugar industry and also because of the high protection from other countries on their sugar industries had encouraged government to apply those policies. Although the policies were in controversial but it was able to increase sugar domestic price.

The growth of import, export and trade balance of Indonesian sugar for 10 years before and 10 years after the AoA-WTO implementation as follow. Import volume during 10 years before the AoA-WTO implementation (1986-1994) was still small, around 226 thousands ton on average. But after the AoA-WTO had been implemented, the import increased and tends to be higher. In 1999 the import drastically increased at around 2324 thousands ton.

The implementation of import tariff and non tariff policies (import regulation, monitoring and limitation) by government to protect domestic sugar in 2000 were successfully reducing import in 2002 at around 1.029 thousands ton. But in 2003 import tend to increase and some of them came from illegal import. For 10 years after the AoA implementation (1995-2006), average import volume is 1407 thousands ton which import in 2006 was almost sevenfold compare to the import during ten years before AoA was implemented.

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12. Experiences with agricultural structural adjustment – Chinese Taipei

Paper presented by:
Ms. Tsai-feng Hsiao
Senior Specialist, Department of Planning,
Council of Agriculture, Chinese Taipei

Introduction

The agricultural sector in Chinese Taipei mainly comprised small family farms with an average farm size about 1 hectare. Many family farms received their own land during the land reform in early 1950s'. Agriculture experienced rapid growth in early stages and contributed to laying a foundation for economic development.

In late 1960s, the strong growth of non-farm sectors drew farm labor away from agriculture and created rural labor shortages, driving up farm wages and agricultural production costs. As a result, the expansion of agricultural exports became more difficult while agricultural imports increased continually. Since 1969 Chinese Taipei has had a deficit in its agricultural trade and that deficit has continued to grow. At the time, there was a marked slowdown in the growth of agricultural production and an increasing income gap to the detriment of farmers.

These factors induced a shift in agricultural policy from taxing to supporting farmers in the early 1970s. Beginning in 1973, a number of programs were carried out by the government to support agriculture and farmers. These programs, however, have been adjusted from time to time as new issues and problems emerged in the course of Chinese Taipei's economic development. The present paper briefly outlines the agricultural policy adjustments and surveys the impact of the policies and on-going adjustment issues that require a policy response.

Agricultural policy adjustments

The Accelerated Rural Development Program

The agricultural policy adjusted in the early 1970s aimed at increasing agricultural production, raising farm incomes, improving the rural environment and accelerating agricultural modernization. To this end, the Accelerated Rural Development Program was launched in 1973 with specific measures including:

- abolishing the rice-fertilizer barter system, which did not favour rice farmers;
- abolishing the education surtax on farmland;
- easing the terms of agricultural credit;
- improving agricultural marketing;
- strengthening rural infrastructure;
- accelerating the adoption of improved cultural techniques;

- establishing specialized agricultural production areas;
- strengthening agricultural research and extension; and
- encouraging the establishment of industrial plants in rural areas.

Since ARDP was ended in 1979, a series of successive programs have been continued to promote the agricultural development and prosperity in rural area with adjustments to address new issues and problems emerged. Foremost among these were those related to rice policy adjustments and measures in response to the impact of WTO accession.

Rice policy

Rice price support

Rice, the staple food crop with great political and social significance in Chinese Taipei, has received most agricultural production subsidies among sub-sectors. A guaranteed purchase rice price was introduced during the time of the world energy and food crisis in 1974 to ensure a reasonable income to rice farmers and to give them an incentive to increase rice production.

Under a favourable price condition, rice production reached a record high in 1976 while rice consumption decreased drastically due to the change in food diet pattern. The program created a persistent rice surplus problem and a financial burden on the public treasury. The rice purchase scheme was adjusted to a limited purchase in 1977.

Paddy field diversion program

Rice policy was further modified by adopting the Paddy Field Diversion Program in addition to the guaranteed rice price scheme in 1984, aiming to prevent oversupply of rice and also to achieve self sufficiency in production of corn, sorghum and soybeans. Farmers were encouraged to divert area under rice to other crops or fallow by instruments of subsidies, guaranteed purchase prices of corn, sorghum and soybeans.

Rice production had successfully reduced to a level of a supply and demand balance for rice in the late 1990s. Meanwhile, agricultural policy came under pressure as negotiations for WTO membership drew near.

Farmland adjustment program

The Farmland utilization adjustment program was launched in July 1997, which replaced the paddy field diversion program, to ensure compliance with WTO accession commitments including reduction of domestic production subsidies and allowing the minimum access volume. Under the program, farmers are encouraged to set rice land aside as fallow and compensated for the loss, to plant green manure crops, to rotate the rice crop to other crops.

Price support for rice was maintained while those for soybean, corn, and sorghum were adjusted to reduce the guaranteed purchase coverage from two crops a year to only one crop a year. Under the program, the production of rice, corn, sorghum and soybeans had successfully decreased while the fallow area had increased significantly over time to a level about 86 percent of the planted area for rice in 2007.

Impact of agricultural policy adjustments

The impact of agricultural policy adjustments could be examined from the changes in agricultural production, land use, and farm structure etc in last three decades. Agricultural production revived immediately after agricultural policy adjusted in the early 1970s. However, it exhibited a slight downward trend since 1980s and went down further after accession to the WTO in 2002. It suggested that agricultural sector in general did not successfully to adjust agricultural structure based on comparative advantage.

The ARDP and the rice price support introduced since the early 1970s were intended to revitalize the agricultural sector and the rural economy. As rice farmers responded favourable to price supports, rice production reached all time high of 2.71 million tons in 1976. The increase in rice production, together with decrease in per capita consumption of rice, has resulted in a serious rice surplus since 1976.

In the 1980s, the government took steps to encourage diversification away from rice towards higher-value crops and products more consistent with emerging consumer demand patterns. In particular, the production of commodities with relatively high income-elasticity of demand—such as pork, chicken, fruits, vegetables, and feedstuffs—was promoted.

Diversification proceeded in two directions. First, the production of goods in which Chinese Taipei enjoyed a comparative advantage (such as pork and some fruits and processed food) was promoted both for domestic consumption and export. Second, the production of goods import-substituting goods in which Chinese Taipei had a comparative disadvantage (such as corn, sorghum, and some dairy products). The first one was clearly desirable from the standpoint of efficiency. But the second one was only the least-advantage choice from the standpoint of domestic resource utilization.

The agriculture sector has been characterized by small farms which were at low productivity as compared with large farms. The distribution of farm households by farm size showed an increasing trend in the percentage of the group below 0.5 hectare. It suggested that the agricultural policy has not been able to deal with one of the major impediments to a greater efficiency in land use – the rigidity of the farmland market.

The effect of efforts made to enlarge the operational scale of farms has been less than satisfactory. The rigidity mainly arises from fear of losing land ownership under the old land tenure system that was created in 1950s under the land reform, which was revised in 1982. The set-aside program also impeded the farmland market in a way that farmers, especially aged farmers and part-time farmers, would tend to set their farmland as fallow with subsidy rather than lease out their farmland.

On-going issues and prospects

Rice policy has been criticized for the contradictions in its provisions. As rice price support is higher than required for a balance of supply and demand, farmers are encouraged to shift from the production of rice to the production of other crops or fallow in order to reduce rice production, but the guaranteed rice price gives them an incentive to produce even more rice.

Recently, a direct payment to supplement farmers' income and to influence land use is being widely discussed. It is receiving increasing attention as further reduction in AMS is expected in the Doha Round negotiations.

The set-aside program has also been criticized for impeding farmland market and rural development. The agriculture sector shrinking in size has also been losing its buffer function of absorbing unemployment.

The recent food price surge in the world market increased the concern about the adequacy of drawing farmland away from food production. A program aiming to promote the use of set-aside land for growing energy crops or growing plants for landscape purpose has been proposed recently to this end. A 'farmland service' program was introduced in 2007 to facilitate the transactions in farmland market and enlargement of production scale through an agent system provided by farmers' associations.

Further trade liberalization and reduction of production subsidies is expected in the new round negotiations, it calls for agricultural policy adjustments to promote a competitive and quality-based agriculture integrated with rural development and establish a safety net for farmers to mitigate the impact of production and market risk.

13. Experiences with agricultural structural adjustment – Russian Federation

Paper presented by:
Ms. Natalya Noskova
Department of International Cooperation,
Ministry of Agriculture, the Russian Federation
and
Ms. Natalya Mezhonova
All Russian Institute on Agrarian Problems and Informatics,
The Russian Federation

Goals and directions of agrarian reform in Russia

The economic liberalization that followed the Soviet Union break up caused vital necessity of reforms in agrarian sector. The ultimate goal of Agrarian Reform in Russia was to create conditions where rural citizen could effectively work i.e. have the access to all production factors including land. To achieve this goal two main tasks were implemented: to privatise agricultural land and to reorganize collective and state farms.

At the early 1990s Russian legislation set the stage for large-scale dismantling of the state and collective farm system in order to create individual and corporate private farms. From 1991 through to early 1995, a series of government resolutions and decrees were adopted defining the procedures of this change. Formally the agrarian Reform in Russia has begun with acceptance in 1989 the Law "On Private Farm" – introducing new type of family Farms which should had replaced collective and state farms.

The scheme of land privatisation was preceded by a heated debate. Unless the other countries Russia could not allow itself to chose restitution variant because the process of finding the land owners should be too complex, Russia had intricate land relations before the October revolution and it could cause the new tension in vulnerable society.

o in fact there were two main proposals how to privatise land: to share it between rural citizen or between existing collective and state farms. The other questions such as who should be included to the list of owners (current workers, pensioners, all rural dwellers, those who lived there during last 20 years, managers); or should this process be free of charge or one can pay; or to what form kolkhozes and sovkhozes should be transformed to receive the land; or where new private farmers could receive the land to start working independently etc. were of rather technical character.

One of the most important between these "technical" questions was whether new owners will receive conditional shares or land plots in kind. Finally it was decided that the variant with conditional shares is more preferable since the state and the owners could postpone the decision of what to do with these land plots and avoid the costly procedure of land apportionment procedures.

Main results of agrarian reform – Land privatisation and new structure of agriculture

As a result of the agricultural land privatization 12 million rural citizen of Russia (each third rural citizen) have received land shares, which have made 88 % of the private agricultural land of Russia. In total it has been privatized 113 million in hectares of the agricultural land. It was essential, because 97 % of all private lands in country - agricultural land.

At present, 65% of land shares are leased to agricultural enterprises, 4.4 % - leased to family farms, 1.6% - allocated for private households Plots, 28.3 % - not claimed and used by agricultural enterprises. Besides as a result of privatization of property of former collective and state farms it has been transferred property in cost nearby $60 billion ($5 thousand per person). Collective and state farms were transformed to joint-stock companies, production co-operatives and other legal forms existing in market economy.

But notwithstanding the form at the beginning of 2000-ties 87% farm enterprises in Russia were insolvent. Their bank accounts were frozen, barter transactions prevailed, officers of the court were seizing their property and they had no access to credit (including subsidised credit). These farms were laying off workers; they were unable to exploit land and funds available to them efficiently and to full capacity. They paid low wages, which were often in arrears[24].

Since 1999 the financial situation in agriculture has been constantly improving. The share of profitable agricultural enterprises increased. This process was defined consequences of crisis in 1998. Exception became 2002 when the agriculture has suffered from the prices falling for agricultural production. The government support and investment in agriculture increased. On positive dynamics the certain influence was rendered with re-structuring of debts of agricultural producers.

The Program "On Re-structuring of Debts of Agricultural Producers" plays the main role in financial stability of agricultural enterprises (40 % of which took part in the Program).
The bankruptcy of agricultural enterprises grows. In 2005 7385 affairs about bankruptcy have been raised, in 2006 this number is 10051. The share of profitable agricultural enterprises is more than 70% in 2007. The sum of restructured debt is $3.4 billion. The bankruptcy process and re-structuring of debts promoted to improve situation in agricultural sector[25].

Influence of priority national project – "Development of Agro-Industrial Complex"

At the beginning of 2006 the situation has improved, when Russian government started the Priority National Project "Development of Agro-Industrial Complex"(2006-2007). The total investment of project is $1.97 billion. The main components of this project were:

- accelerated development of livestock production (investment $1.22 billion);
- promoting small-scale farming (investment $0.57 billion) –

[24] Data from All-Russian Institute of Agrarian Problems and Informatics (VIAPI)
[25] Data from Centre of Agri-Food Economy, Moscow

  - subsidizing interest rates on loans to Family Farmers, household plot holders and their co-operatives (95%),
  - support through provision of credit facilities to newly created and existing credit, input supply and marketing as well as processing co-operatives,
  - developing an infrastructure for mortgage credit lending with land as collateral;
- provision of affordable housing to young specialists (investment $0.18 billion).[26]

Since 2007 Project includes additional measures of support sheep-breeding, reindeer-breeding, industrial fish-breeding and also development of availability credit resources to purchase of breeding cattle, techniques and equipment for service of livestock. The large measures are not new government support and include programs of last period in Project.

In summary, the realization of Priority National Project did not become the factor, allowed to stop falling rates of growth in agrarian sector. It was possible to stop falling of meat and milk production. Thus, the unique branch which has developed as a result of realization of the National Project became of pork production. However, sharp growth of pork production has caused a collapse of the prices that adversely affects prospects of sector.

New legislation system – Federal law on "Development of Agriculture"

It was considered that legislative base could play an important role in the efficient rural development. In 2006 the Russian government has accepted the Federal Law "On Development of Agriculture" regulating economic attitudes in agriculture. The present Federal law adjusts the attitudes arising between citizens and legal persons, the agricultural commodity producers recognized on the basis of the present Federal law, other citizens, legal persons, bodies of the government in sphere of development of agriculture. Also the Federal law establishes legal bases of realization of the state social and economic policy in sphere of development of agriculture, food markets and assistance to sustainable development of rural territories.

New system of agricultural adjustment – State program of development of agriculture and markets for 2008-2012

New time has brought new challenges to the agricultural sector. For the first time the agrarian policy has paid attention to sustainable development of rural territories, and not just on support of agriculture. The Ministry of Agriculture has accepted the State Program for Development of Agriculture and Regulation of Agricultural Production and Food Markets on 2008 – 2012.

The main components of Program and total federal investment for 5 years were:

- sustainable development of rural areas – 20.5% of total budget;
- creation of enabling conditions for functioning of agriculture (development of Extension Service, Market Information Network etc.) – 11.8% of total budget;
- development of priority sub-sectors in agriculture (livestock and crop production) – 13.1% of total budget;

[26] http://www.mcx.ru/index.html?he_id=909&doc_id=9187

- achievement of financial stability of agriculture – 53.3% of total budget; and
- regulation of agricultural production and food markets – 1.3% of total budget.

What's new in this program:

- the main goal – sustainable development of rural territories, increase in employment and living standards of rural population (sustainable rural livelihoods);
- massive financing and special credit schemes for Family Farms, Private Household Plots and Agricultural Cooperatives;
- credit for off-farm business – for the first time;
- substantial increase in finance (the federal + regional budgets ≈ $45.7 billion);
- for the first time state support planned and guaranteed for 5 years and is fixed in one complex document rather than in contradictory legal acts as it was before; and
- program monitoring and evaluation will be provided (OVIs, National Report, public discussion on Program Efficiency).

Summary

Summing up, it is possible to tell, that in comparison with the period before reform the agriculture was not restored yet. Except for especially branch factors of delay of growth in agriculture there are also macroeconomic reasons. Strengthening of rouble has lowered internal competitiveness agricultural production on 3-5 %, external competitiveness of exported production has decreased also. Increase the prices for mineral oil has lowered profitability of grain manufacture that became consequence of reduction of the land areas under grain.

At the same time there are structural changes which allow talking about positive development. Process of sharp differentiation of agrarian producers is observed: a part from them actively develop, modernizes production, involves investments, others become bankrupts. Crystallization of branch structure of sector proceeds also separate branches become competitive on external and local markets, others slowly or quickly stop activity.

A positive factor is improvement of social sphere. The wage in agriculture increased higher rates (31.2% for January to September 2007) than mining industry (25%)[27]. Backlog of village from city in social sphere remains rather significant but the favorable tendency is important.

The main task of the State program in sphere of regulation of foreign trade in agro-food sector should to become an establishment of transparent regulations, stability with a view of creation of condition for internal production, on the one hand, and maintenance of the accessible foodstuffs for the Russian consumers, on the other hand. Besides, for 2008-2012 Russian agrarian sector should be adapted for conditions of functioning after the introduction into WTO.

[27] Data from Centre of Agri-Food Economy, Moscow

14. Structural adjustment in Australian agriculture

Paper presented by:
Ms. Maryann Weston
Senior Policy Officer, Welfare, Adjustment and Regional Programs
Rural Policy and Innovation Division
Department of Agriculture, Fisheries and Forestry, Australia
and
Mr. Gary Whatman
Policy Officer, Welfare, Adjustment and Regional Programs
Rural Policy and Innovation Division
Department of Agriculture, Fisheries and Forestry, Australia

Overview

Farming in Australia

The Australian farming sector continues to face structural adjustment pressures both within and outside farming businesses. Within farming businesses and families, adjustment pressures come from a range of factors such as demographics, expectations, skills and farm/business management requirements. Additionally farming families also face adjustment pressures from changes in markets, environment and community requirements, climate (including reduced water availability) and declining terms of trade.

About 82 per cent of broadacre and dairy farms in Australia are family owned and operated. Both ABARE and Australian Tax Office (ATO) estimates show that sole traders and partnerships operate most farms, with companies and trusts being used in less than 10 per cent of instances[28].

In Australia 10 per cent of farms produce around 60 per cent of agricultural output. In contrast, the smaller farms - accounting for almost 40 per cent of all farms - produce just three per cent of the total value of agricultural output. Smaller farms, however, account for most farm employment.

The most productive and successful farms are in a better position to manage the inherent risks that are involved in farming, particularly in years of drought. They have written risk management plans that explicitly include drought management strategies to support decisions including destocking, building and maintaining stores of fodder and building and maintaining financial reserves.

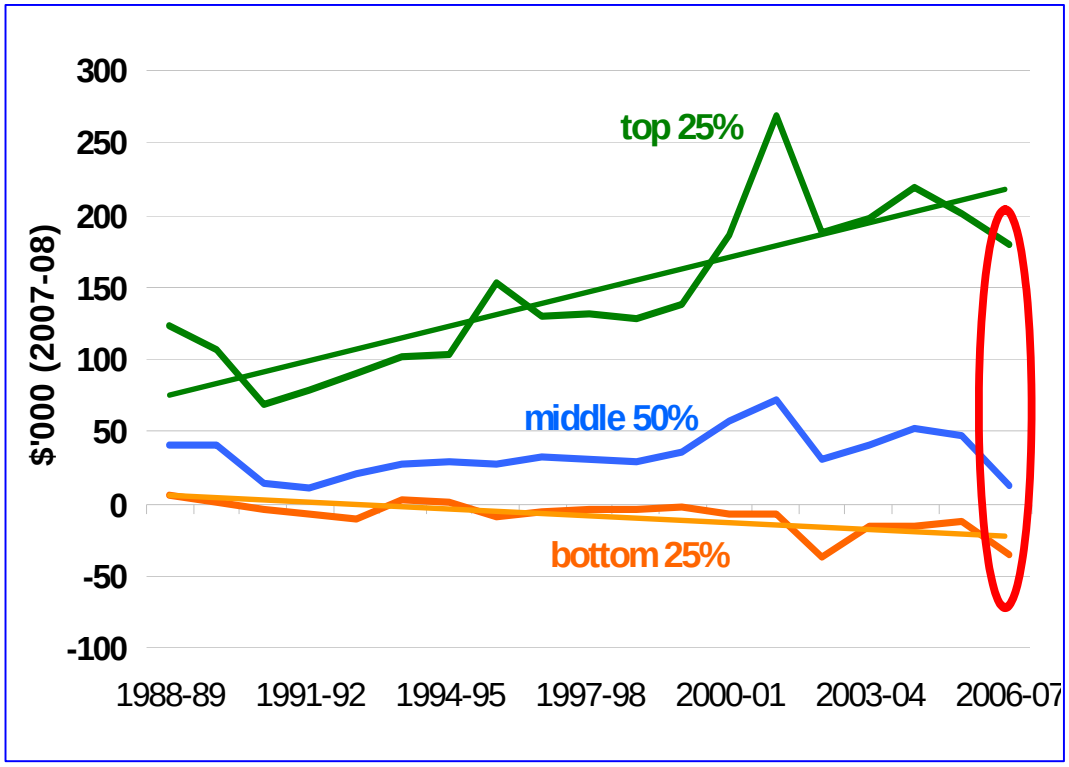
[28] Farmer Profiling Study 2004/ABARE 2006

Fewer of the top performing farms receive drought income support. Farmers running these properties are typically younger and are more likely to be expanding their business through the acquisition of land and increasing substitution of capital for labour. As a result, the top performing farms generally have higher debt and lower equity levels than the rest of the farm population. However, the income generated from this capital base is much greater. The best performing farms:

- are larger and often stretch their resources to grow
- seek new ideas and outside advice from a wide range of sources
- embrace new technology but do so judiciously
- don't do things out of habit or tradition
- understand the key value drivers of their business
- take calculated risks[29]

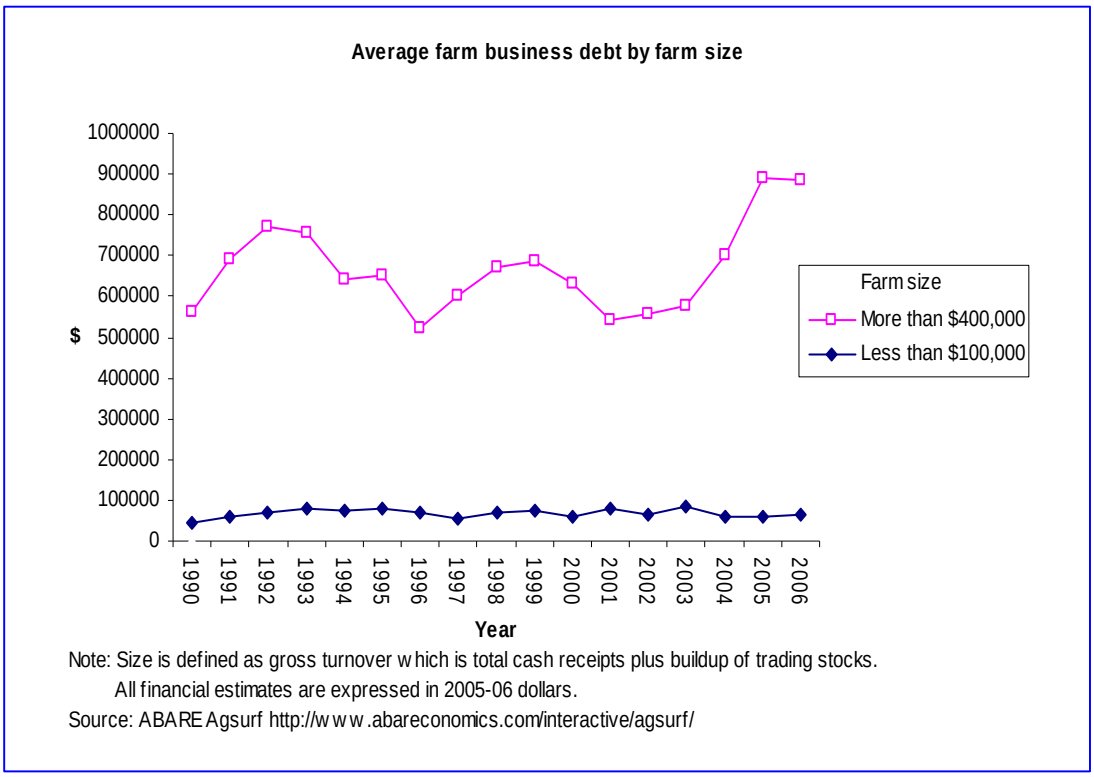
The Australian Government approach to adjustment has been to target the lesser performing farms through provision of information, funding of research and development and capacity building.

Australian Broadacre Farm Incomes



Source: Phillip Glyde, Executive Director of ABARE Outlook Conference 2008

[29] NAB Agribusiness, 2007 Working With the Farm Sector, ABARE Outlook Conference



Note: Size is defined as gross turnover which is total cash receipts plus buildup of trading stocks.
All financial estimates are expressed in 2005-06 dollars.
Source: ABARE Agsurf http://www.abareconomics.com/interactive/agsurf/

Primary Industries

Australian agricultural has a history of change. Production has increased and diversified, with developments in transport networks and refrigeration, irrigation and farm machinery, plant and animal breeding and husbandry and information technology. New industries have sprung up while others have shrunk - irrigated agriculture now accounts for almost a quarter of the total value of agricultural production and in normal times, the economic lifeblood of many rural communities.

In 2006-07, the preliminary estimate of the gross value of agricultural commodities produced was $34.2 billion, a fall of 10 per cent (or $3.6 billion) on the previous year. The value of crops fell by 20 per cent, only slightly offset by the increased gross value of livestock slaughtering and other disposals (up by 3 per cent), and livestock products (up by 1 per cent) in 2006-07[30].

Production of the major winter grains in 2007-08 is estimated at around 12.7 million tonnes for wheat, 5.5 million tonnes for barley and 931 000 tonnes for canola. Although these production levels are significantly higher than production in 2006-07, they are well below average:

- total summer crop area in 2007-08 is forecast to increase by 37 per cent to more than 1 million hectares.

[30] ABS 7501.0 - Value of Principal Agricultural Commodities Produced, Australia, Preliminary, 2006-07

Average to above average rainfall in October and November in southern Queensland and northern New South Wales has prompted the planting of a large area of grain sorghum. However, lack of irrigation water is forecast to severely constrain the area planted to cotton and rice in 2007-08.[31].

The agriculture sector is an important source of employment in regional and rural Australia. The number of people employed in the Agriculture and Services to agriculture industries increased marginally in 2007 to a yearly average of 334,000 persons, the first increase for five years. A 15 per cent reduction in the work force in 2003 was largely the result of the drought experienced over most of Australia in that year which severely affected the agriculture sector.

Since then, much of Australia has barely been out of drought, with employment in the agriculture sector averaging 338,000 people over the last five years - 18 per cent less than those employed in 2002. The majority of people employed in agriculture in 2007 were men (68 per cent)[32].

Farm financial position and capacity

Average farm cash incomes declined from $81,290 in 2005-06 to an estimated $26,600 in 2006-07 mainly due to severe drought across southern and central Australia. This is the lowest in over 30 years. During the same period the number of farms with negative cash farm income increased from 23 per cent to an estimated 44 per cent.

Farm cash incomes for grain farms in New South Wales, South Australia and Victoria are estimated to have declined the most, and the dairy industry has also been particularly affected[33].

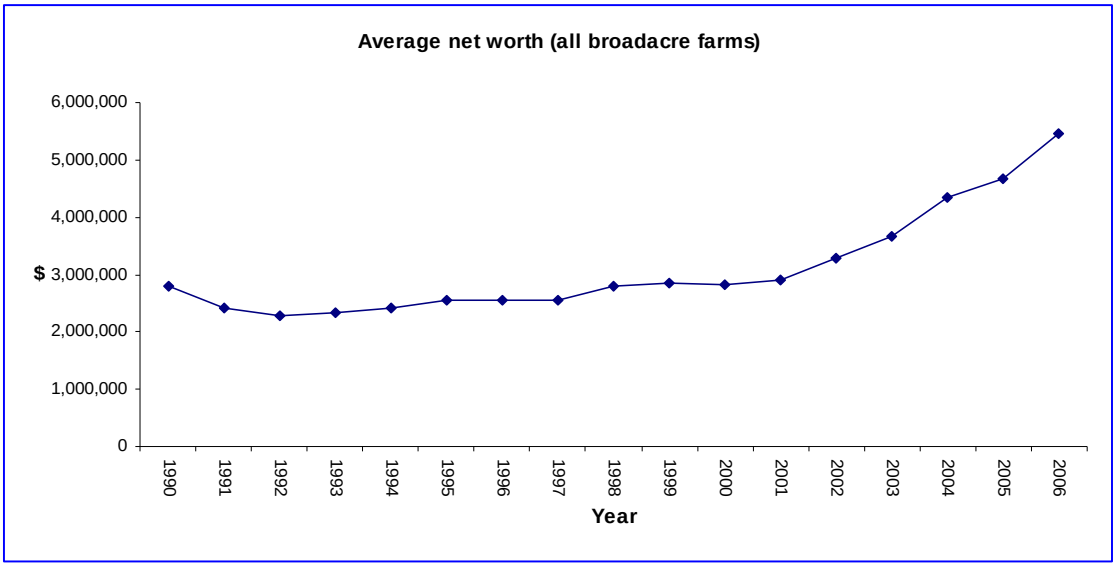
While the average equity ratio for Australian broadacre farms was 90 per cent at the end of June 2006 (relatively high in historical terms), the large increase in the proportion of farms recording negative farm cash incomes in 2006-07 is likely to result in significant increases in farm debt.

The average farm debt was projected to be around $412,700[34] at 30 June 2007. However, the high asset base of farmers, partially due to the high land prices, means that net worth can be substantial. The average value of farm financial reserves for all broadacre farms at 30 June 2006 was $134,840[35].

Drivers of change

Farmers throughout the world are constantly faced with pressures for change. Technological developments, changing consumer preferences, climatic conditions, exchange rate variability, market access, and increased competition are just some of the forces impacting on farmers in both developing and developed countries. The cumulative effect of these factors means that farmers are faced with ongoing pressures that can impact on the physical and financial performance of their farm operations.

[31] ABARE 2007, Australian Grains 07.2 Outlook for 2007-08 and industry productivity
[32] ABS 1301.0 - Year Book Australia, 2008
[33] ABARE 2007, Australian Farm Survey Results 2004-05 to 2006-07, Canberra.
[34] ABARE 2007, Australian Farm Survey Results 2004-05 to 2006-07, Canberra.
[35] ABARE 2007, Australian Farm Survey Results 2004-05 to 2006-07, Canberra.



Source: ABARE Agsurf http://www.abareconomics.com/interactive/agsurf/

A report released in 2006[36] identifies a number of forces driving change within Australia's agricultural sector, including:

- trade – the future sustainability of the agriculture and food sector will be determined largely by conditions in overseas markets and by the sector's ability to be competitive in export and domestic markets;
- climate change – the science suggests further changes in patterns, amounts and intensities of rainfall in the future;
- biotechnology – mm new tools for use in biotechnology has meant a significant increase in the power and efficiency of agricultural techniques available;
- water reforms – increasing demand for already scarce water resources and greater public scrutiny is impacting on the way water is managed;
- population shifts – an estimated 85 per cent of Australians now live within 50km of the coast. This urban migration can affect social infrastructure in country Australia, with implications for local services, education, health and finance. It can also reduce the level of skills, labour and professional services supporting rural industries;
- public perceptions – urban migration and a more diversified economy are creating an community less connected with agriculture and an understanding of how the sector operates. A 2003 survey on community attitudes found 54 per cent of respondents rated environmental degradation above security of farm incomes as extremely important for rural and regional communities and Australian farmers;
- demographic change – the number of farm businesses is declining by about 1.2 per cent per year, as the average size of farm businesses increases both in actual land and the value of operation. The sector's age profile is also changing as the median age of farmers steadily increases.

[36] Agriculture and Food Reference Group 2006, Creating our Future: Agriculture and Food Policy for the Next Generation, Report to the Minister for Agriculture, Fisheries and Forestry, Canberra

Global markets

Increasing globalisation and trade liberalisation has increased the pressures for change. Competition from world markets and commitments to liberalise trade under a range of agreements have put pressure on countries to undertake structural reform at macroeconomic and microeconomic levels, and effect change to domestic regulatory and trade policies, including in the agricultural sector.

The relationship between structural change and industry development can be seen in the changing fortunes of individual industries. Farmers enter or exit an industry after considering the potential risks and returns. As market returns change, farmers adjust their management decisions accordingly. These decisions affect the size of the farm, enterprise choice and diversification, the scale and intensity of production or the need to find ways to supplement income.

Farmers may decide to leave the industry or even agriculture, altogether. This activity is an essential ingredient for improvements in farm performance and the movement of resources between industries. Ultimately, it leads to higher productivity and improved industry competitiveness and productivity gains are the key to income growth and increased individual wealth (Domestic Structural Adjustment in the Agricultural Sector - Discussion Paper submitted by Australia to the 11th Agricultural Technical Cooperation Working Group Meeting 2007).

Australian experiences with structural change indicate farmers have considerable resilience and a capacity to adapt to changing market conditions. The government promotes self-reliance in the way farmers respond.

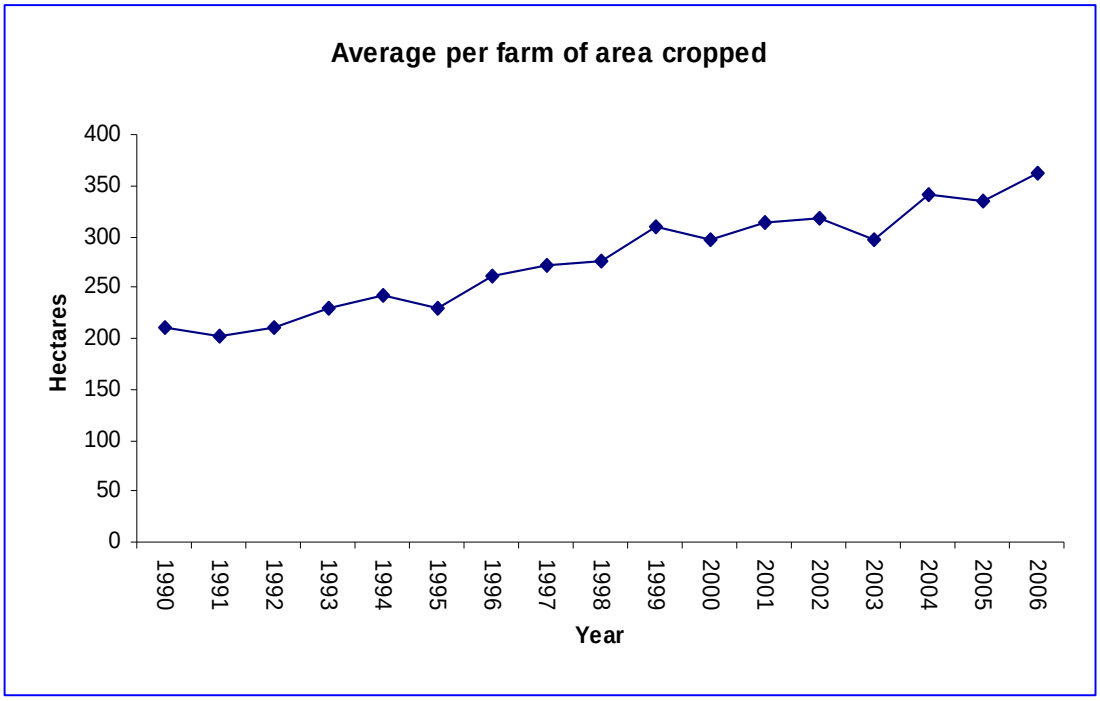
Terms of trade

Declining terms of trade have been a long standing characteristic of Australian agriculture. However, the strong global commodity outlook means that farmers' terms of trade are likely to increase slightly in the coming year and to underpin growth in farm incomes. However, there will be ongoing competition from producers elsewhere in the world, the strong Australian dollar will continue to make it difficult to be competitive in export markets, and input prices are likely to continue to increase (Lisa Elliston, Manager, Productivity and Farm Surveys Branch of ABARE Outlook Conference 2008).

Many of the usual challenges facing the agricultural sector remain and new challenges are emerging. Broadacre farmers in Australia have a long history of making productivity gains through innovation and by finding ways of producing more output from fewer inputs. They will need to continue to do this to remain profitable and internationally competitive (Lisa Elliston, Manager, Productivity and Farm Surveys Branch of ABARE Outlook Conference 2008). In response to these pressures, the average size of commercial farms has continued to grow**.**

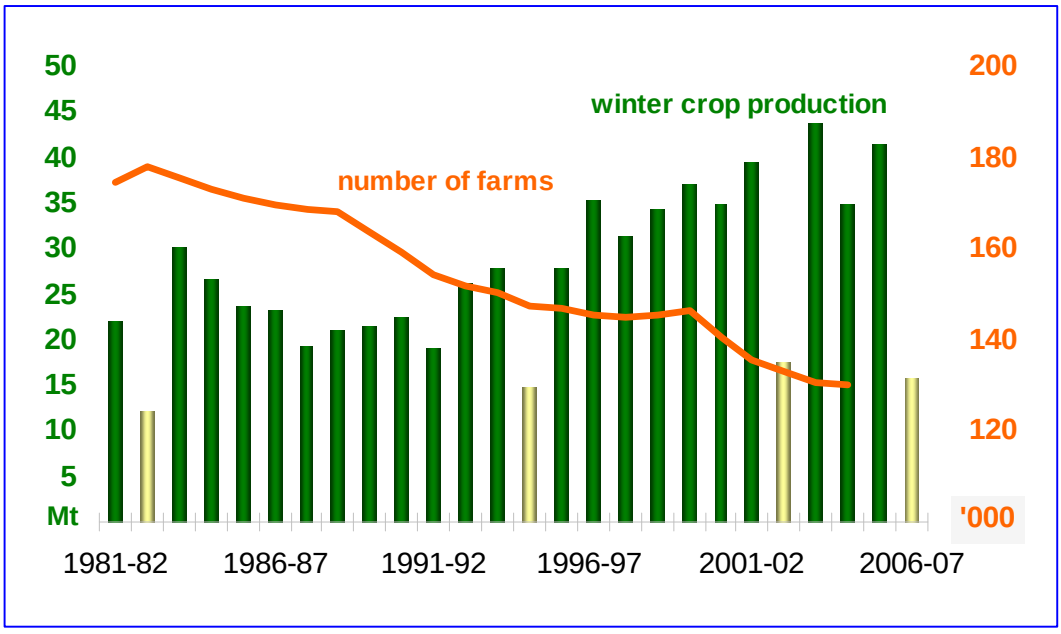
Productivity

Continued productivity growth is of fundamental importance to the agricultural sector. Primary producers must focus on increasing productivity to maintain and increase the profitability and sustainability of their businesses. Climate change will affect the long term productivity and profitability of the Australian agriculture and food sector.



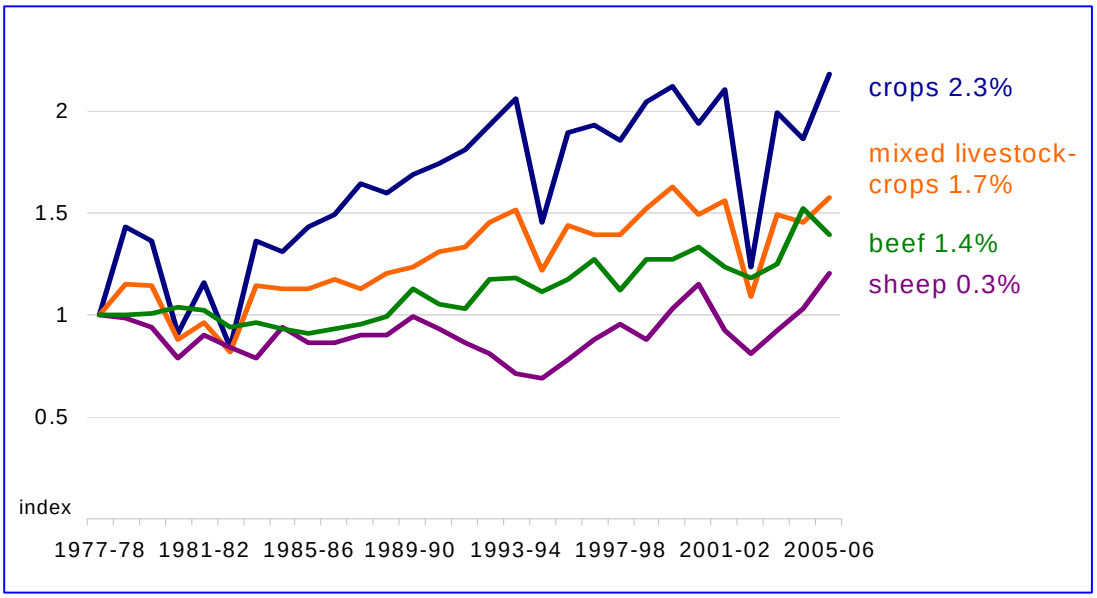
Source: Phillip Glyde, Executive Director of ABARE Outlook Conference 2008

Winter crop production and farm numbers



Source: Phillip Glyde, Executive Director of ABARE Outlook Conference 2008

Productivity growth in Australian agriculture



Source: Lisa Elliston, Manager, Productivity and Farm Surveys Branch of ABARE Outlook Conference 2008

However, with the right investment in knowledge, innovation, modern infrastructure and productivity, Australian agriculture can succeed in global markets and win – including in highly value-added agricultural markets.

Continued productivity growth is of fundamental importance to the agricultural sector. Primary producers must focus on increasing productivity to maintain and increase the profitability and sustainability of their businesses. Climate change will substantially affect the long term productivity and profitability of the Australian agriculture and food sector. However, with the right investment in knowledge, innovation, modern infrastructure and productivity, Australian agriculture can succeed in global markets and win – including in highly value-added agricultural markets.

The question for the government is how to help generate a new wave of productivity growth? That requires investment in skills; infrastructure; research, development and innovation; in ways to improve water use efficiency; investment in climate change adaptation measures, reducing emissions and a more efficient regulatory and compliance regime at both a state and federal level (The Hon. Kevin Rudd MP Prime Minister of Australia, Opening address ABARE Outlook Conference 2008).

The government is responding to these issues. At a recent forum, Australian and state government agricultural ministers agreed to consider a specific set of influences that are key to agricultural productivity growth including:

- the regulatory framework;
- R&D and access to technologies;

- water management;
- training and education;
- skills and labour supply, including retaining and attracting young people;
- bio-security;
- infrastructure;
- scale of production; and
- land use intensity.

The Ministers agreed to consider the full value chain of agricultural production in the economy, from paddock to plate, and assess the productivity opportunities through the value chain. Cross-jurisdictional work on strategic R&D priorities and on a national collaborative approach to undertaking R&D will be accelerated.

Climate change

Climate variability and change have increased the pressures for change with agricultural systems throughout Australia. There is now clear evidence that our climate is changing as a result of greenhouse emissions, and that this will affect agriculture.

Australia is projected to be one of the most adversely affected regions from future changes in climate with severe impact on agricultural production and exports. Projected higher temperatures and lower rainfall are expected to reduce agricultural production. Higher concentrations of carbon dioxide could also reduce crop quality, by lowering the content of protein and trace elements.

Extreme events such as flooding and droughts are forecast to increase in frequency and severity. Such events are likely to reduce agricultural productivity and production by decreasing crop yields and increasing stock losses. Changes in temperatures are also expected to alter the incidence and occurrence of pests and diseases (Don Gunasekera, Yeon Kim, Catherine Tulloh and Melanie Ford, 2007, Climate Change impacts on Australian agriculture, Australian Commodities December Quarter 07.4).

ABARE indicates that, with assumed changes in climate and in the absence of any mitigation and/or adaptation measures, Australian production of key agricultural products is estimated to decline — wheat by 9.2 per cent at 2030 and 13 per cent at 2050; beef by 9.6 and 19 per cent; sheep meat by 8.5 and 14 per cent; dairy by 9.5 and 18 per cent; and sugar by 10 and 14 per cent respectively[37].

Approaches to structural adjustment

The government prefers farmers to adjust autonomously through operation of markets to change resource allocation decisions within agriculture and between agriculture and the other sectors of the economy. Of the 15,000 farmers leaving agriculture since 1997 only 1122 received assistance to re-establish.

[37] Don Gunasekera, Yeon Kim, Catherine Tulloh and Melanie Ford, 2007, Climate Change impacts on Australian agriculture, Australian Commodities December Quarter 07.4

These funds have been diverted to lower income farmers and those with less capacity to change. Australian governments have recognised that many farmers and some industries have had difficulty in making the adjustments autonomously and have directed resources to facilitate change.

The Rural Adjustment Scheme (RAS) was first introduced in 1977 as a single integrated scheme to replace existing adhoc arrangements. It included components such as interest rate subsidies, exceptional circumstances provisions, skills enhancement, re-establishment assistance, and land trading. Almost 41,000 primary producers accessed RAS assistance.

In 1997 the RAS was reviewed. This marked an important development in Australian Government policy for the agricultural sector. It recommended that future government programs to address rural adjustment should no longer use interest rate subsidies or grants to farm businesses for productivity improvement.

The Rural Adjustment Scheme was subsequently terminated and replaced by a program with greater emphasis on capacity building, risk management and self-reliance. The new package also included a welfare safety net and decision support for individual farmers undergoing financial hardship.

These new policies and programs encouraged competitiveness, sustainability and profitability in the farm sector. Many farmers have achieved this through government supported training, financial counselling, professional advice, the use of action plans in which farmers are encouraged to use strategic information to improve their situation, training and risk management tools such as the Farm Management Deposit Scheme which allows farmers to set aside primary production income in profitable years, to be withdrawn in lower income periods.

An innovation program encouraged the adoption of already researched and trialed practices, processes, production techniques, technologies and products. The government also worked with agricultural industry bodies to help them identify challenges and opportunities, and address them by developing and implementing industry-led strategies.

When the government terminated the RAS in 1997 and released an integrated rural policy package the Exceptional Circumstances (EC) policy acknowledged that rare and severe events that impact on the farming sector and are outside the scope of farmers' normal risk management strategies. Income support to meet day to day living expenses and interest rate subsidies were established for drought declared farmers. This support is subject to an income and assets test.

Current approaches to adjustment

Policies that encourage adjustment, preparedness and adaptation in vulnerable sectors in agriculture, including already marginal farming enterprises will reduce the impact of climate change. Equally important are policies that assist industries to manage change and increase productivity.

A risk management approach will assist in forecasting the effects of structural change and determining the most effective policy measures. Improving business and risk management skills will assist in addressing financial pressures and restructuring efforts to improve efficiency and productivity.

Farmers need tools, resources and support (such as information and training workshops) to help them prepare for, and adapt to, potential alternative futures. The right information and incentives will assist farmers to deal with the uncertainties and manage the risks relating to the nature and extent of future climatic changes.

At the on farm level, a greater capacity to change requires not only a risk management approach but continuing attention to commodity price fluctuations, the strength of the Australian dollar, changes to water access and use (irrigated regions) and a skills and labour shortage.

The government can also assist in capacity building by working with industry to develop markets, improve knowledge and skills and continue to take stock, prioritise and develop strategies most suitable to a changing climate.

Lessons learnt

Reviews of structural adjustment policies highlight the need for improved farm and industry self reliance, capacity to handle climate and financial risk, international competitiveness and the need for the government to take a more consistent approach to assistance[38].

Reviews of drought policy in Australia have emphasised the importance of managing risk and preparing for drought and climate variability. A case study which demonstrates the importance of planning in managing drought and climate variability is at Attachment A.

Managing the impacts of climate change

A challenge for governments and the agricultural sector is to deal with the uncertainties and manage the risks relating to the nature and extent of future climatic changes and potential mitigation and adaptation policies. Further research and the development of policies and farm management approaches that are flexible enough to deal effectively with a range of potential uncertainties will help with this.

Adaptation measures, including improved agricultural technologies, will be particularly important in reducing the potential impacts of climate change. Adaptation to the impacts of climate change, including through better farm management practices, diversification of crop varieties, shifting cropping seasons, changing livestock breeds and improved farming technologies, can potentially reduce the magnitude of the losses in farm output from climate change.

The Australian Government has made a commitment that the Emissions Trading Scheme (ETS) will commence in 2010 and that the design of this scheme must be finalised at the end of 2008. The Government has not announced whether agriculture will be covered by the ETS but has committed to a comprehensive consultation process on the question of their inclusion in the scheme and on the timeframe for that inclusion:

- while it has not been decided whether agriculture will be covered by the ETS, it is realistic to expect the sector will contribute to Australia's efforts to constrain emissions.

[38] Agriculture and Food Reference Group 2006, Creating our Future: Agriculture and Food Policy for the Next Generation, Report to the Minister for Agriculture, Fisheries and Forestry, Canberra

Agriculture is significant emitter of greenhouse gas emissions. Based on the National Greenhouse Gas Inventory, its emissions are concentrated in the cropping (nitrous oxide which accounts for 35% of agriculture's emissions) and livestock sectors (methane which accounts for 65% of agriculture's emissions). It is important that action is taken now to ensure that these sectors are able to take advantage of any opportunities presented through participation and to address any challenges.

Where to from here?

Our response to climate change globally will require an economic transformation in coming decades. We need to prepare for climate change, but we also need to be ready to seize new market opportunities that come with tackling climate change. The government wants to ensure, however, that any assistance provided improves the resilience of farmers and farm businesses for the future.

The government will invest $130 million over four years in the Australia's Farming Future initiative to help primary industries prepare for the impacts of climate change. The initiative comprises three elements:

- the $15 million Climate Change and Productivity Research Program will boost research on how farmers can respond to climate change. For example, the program might fund research into on the ground measures such as water use efficiency, or work on using and applying climate modelling and seasonal forecasting;
- the $60 million Climate Change Adaptation Partnerships Program will include measures such as workshops to improve farmer awareness and understanding of the impact of climate change on agriculture, and on-farm climate change adaptation strategies such as property management plans; and
- the $55 million Climate Change Adjustment Program will help farmers adjust to climate change by funding professional advice, financial management training and re-establishment grants.

The agricultural sector is highly adaptable and with the right information and incentives has the capacity to continue to adapt and improve its capacity to cope with climate change.

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Attachment A

Drought preparedness

Professional Advice and Planning (PAPG) Grants of up to $5500 are available to assist drought affected farmers to access professional advice to assist their drought management and recovery processes. About 5000 farmers have received a PAPG. The grants may be used for

- obtaining advice such as a farm business viability assessment;
- the development of a farm business plan incorporating a drought management and recovery plan; or

- to obtain financial and agronomic advice about what changes may need to be made to ensure that the farm business recovers from the drought.

Case study – A typical professional advice and planning grant

The farm enterprise in this instance is a beef cattle property with a land holding of 3,500 hectares. This property has been in constant drought for the past eight years. The pastures are deteriorating and non productive perennial weeds are becoming dominant and significantly reducing the stocking capacity of the property.

Access to water for cattle is also a major problem and the owners cart water to the water troughs from the only remaining bores still pumping water. The owners have worked every day for the past five years carting water to keep their cattle herd alive. This property has been in the family since before the turn of the previous century (over 120 years) and the family would like this to continue.

For this enterprise, a lack of water in times of severe drought is a major strain that had not been evident before. The enterprise does have timber that can be legally harvested, although there are restrictions regarding not taking timber from steep country or waterways. Where a tree is taken there must be a replacement tree coming through to replace the prime tree.

The owners used the Professional Advice and Planning Grant to develop a business plan which recommended harvesting timber and using the income for two primary activities. The first was to enhance the timber carrying capacity of the property by undertaking a planting program (in addition to the legal requirements outlined above). The second was to direct the funds from the sale of the timber to specifically upgrade the water bores by connecting these bores with poly pipe to pump water to tanks for gravity feed into the troughs.

The advantages of undertaking this plan include:

- highly efficient use of water for the enterprise;
- freeing up capacity for the owners to manage their property and focus on other areas such as weed control, fencing and animal husbandry of the herd;
- reduced consumption of fuel for water cartage;
- ongoing sale of timber to provide additional income for purchasing perennial legumes to be over sown on the weed-infested areas. These legumes can be sown directly on top of the surface; there is no need for cultivation or working of the land to have the legumes established;
- once established the legumes lift nitrogen content within the soil. As the weeds do not like high nitrogen levels they will dissipate over a period of time and allow the pastures to re-establish without the intense competition from weeds;
- the drought management plan recommended specific legumes taking into consideration the climatic conditions of the property.

These drought management strategies are now in progress and the enterprise is expected to achieve a profit for the first time in six years.

15. Experiences with agricultural structural adjustment – PNG coffee industry

Paper presented by:
Mr. R. M. Mitio, ML
Chief Executive Officer
Coffee Industry Corporation Ltd., Goroka, Papua New Guinea

Introduction

The Paper intends to share the Papua New Guinea's (PNG) experience in the design and implementation of an Agricultural Structural Adjustment Policies, with particular reference to the Coffee Industry. The intents, outcomes and ongoing adjustments issues will be discussed in this briefing under different sub headings of this Paper.

Nature of agricultural adjustment – the issues

There are six pertinent issues that need discussing as set out in the following sub-sections.

Poor performance of the agriculture sector in the 1990s

In early 1990's agriculture sector performed very poorly in terms of the total Revenue contribution to the country's economy. Therefore, that resulted in successive government giving no to low priority to agriculture sector, until recently; the current government recognized the importance of this sector and developed policies giving priority to this sector as the way forward to grow PNG's economy.

Poor services to the rural population

The majority (80%) of the people in PNG live in the rural areas and heavily depend on agriculture produce (food and cash crops) as a means for survival. Agricultural produce (food & cash crops) are the main sources of income for the rural people. It was envisaged that through developing the agriculture sector, the people's livelihood would be improved. However, this has never happened as it was evidenced by poor delivery of basic services in the past.

Capacity problems of public institutions

The monies budgeted by the National Government for agricultural developments purposes in rural areas have not reached the rural mass. Often these were used for the operations and management overheads of the then Department of Primary Industry (DPI) which has now changed to the Department of Agriculture & Livestock (DAL).

This was done in the name of the service delivery. However, there were no tangible outcomes achieved for rural farmers, consequently leading to huge capacity gaps between NDAL and the Provincial Governments.

Ineffective linkages at national and provincial government departments

The National Government Departments responsible for administering service delivery to the majority of the population in the rural areas, where people's livelihood depends heavily on agriculture, has been hindered by the legislative impediment of the Organic Law on Provincial Governments where their linkage and coordination is seriously compromised.

This resulted in a lack of tangible services flowing to the people in the past. The inefficiency and ineffectiveness caused by the two layers of government's machinery is because they do not yet see to eye in deliver these basic services.

Land tenure problems

97% of land in PNG is customarily owned, whilst 3% of the land is Government acquired land, and that is the major impediment to agriculture development in PNG. For any commercial scale agriculture development to take place the consent of the landowners must be sought and prior agreement must be in place otherwise, land compensation demands would pose further setback to the intended development.

This has been the major setback in the past and it continues to be a recurring chronic problem for PNG.

Rural infrastructure failures

Although it is not the agricultural institution's role to address the above issues, deteriorating rural infrastructure (roads and bridges) has posed a serious impediment for services reaching the great majority of the people in the rural areas. On the same token, agriculture products could not reach markets which undermine income otherwise earned for poverty alleviation.

The Government's CRIP (commodity road improvement program) was a good concept but funds got bogged down in bureaucratic processes.

The policies implemented to address the issues

There are several policies implemented by the Agriculture Sector and in particular by the Coffee Industry Corporation to address the issues as alluded to above.

Nationalisation and localisation

This policy promoted and ensures that the once expats owned commerce coffee plantations were localized and competent management of these plantations put in place. Skilled national plantation investors are beginning to emerge. Government funding under NADP are being used by the CIC now to address plantation rehabilitation programs.

Corporatisation and Privatisation

In response to the structural adjustment polices, the Government embarked on the privatisation and corporatisation of state owned enterprises such as Commodity Boards in agriculture. That gave rise to the development of the CIC. A public company conferred with Regulatory powers & functions under an Act of Parliament. The Coffee Research Institute and the Coffee Development Agency was amalgamated and is now called the Coffee Industry Corporation Ltd. This model has proven its accountability and more focused approach to agriculture resource management.

Decentralisation – Provincial & local level government

This policy was developed purposely to ensure that services must be delivered right down to the Districts and LLG levels in the rural areas where the great majority of the people live. The role of District Administration and Local Level Government (LLG) is being enhanced with direct grants (K10 million per District) to increase deliver of these services.

Deregulation and liberalisation

The agricultural industries must be open up private sector investment, be free market driven and competition must be encouraged. This is the sole purpose of this policy and it ensures that private sector participation is facilitated and encouraged.

Floatation and devaluation of the Kina

Although, this policy has its negative effect in terms of devaluation of PNG's currency (Kina), this policy has been adopted to encourage exports of commodity crops, as well the mineral, oil and gold exports to overseas markets for higher foreign exchange earnings for economy.

Land mobilisation

The crown land (3%) which is owned by the Government and leased for commercial plantations have not been adequately secured. Therefore there are land ownership problems with traditional landowners. Customarily land has not been fully utilized for production of cash crops. Land mobilization policy which was formulated under World Bank intervention to free land from customary ownership for development has not been fully utilized because of violent opposition from certain faction of the community.

Key points and aims of design

The Coffee Industry Model is interesting. The 1991 Coffee Industry Board (CIB), Coffee Research Institute (CRI) and Coffee Development Agency (CDA) were amalgamated creating Coffee Industry Corporation (CIC) incorporated as a public company under the Companies Act. At the same time Parliament executed CIC Act 1991 and empowered CIC as a Corporation to perform the Regulatory role of the industry. Such design was intended to:

- ensure effectiveness and efficiency along private sector principles; and

- insulate CIC from political interferences.

Outcomes in structural adjustment

The outcomes of the structural adjustment have produced mixed results. Some results of this policy had negative effects whilst some produced positive results. For example, land mobilization to free land for development purposes did not proceed due to strong opposition. But on a positive note, restructuring of certain institutions such as CIC Ltd has save a lot of resources because funds can be deployed to priority areas as budgeted for fully accounted for on services delivered.

On-going and emerging issues

The amendment to Section 4 of CIC Act has given the Minister responsible limited powers to interfere within the CIC Ltd Board, and there is also a confusion on the identify and status of the CIC with respect to Government legislation. Because the CIC model is a public company, it however inherited certain statutory powers to regulate the industry which is the cause for confusion now. It needs to be addressed before the model is replicated to other sub-sectors in agriculture.

Conclusions

Structural Adjustment in agriculture in PNG has been ongoing for past 30 years and is still being undertaken today through the Government's reform, rationalisation and institutional development process. The performance of the agriculture sector especially coffee sub-sector is mixed.

However, the lessons learned show private Sector driven economic policy can produce positive outcomes, whilst the Government can still provide its important role in facilitating the enabling environment and conducive stable regulatory framework for the economy to prosper into the future.