Agricultural Policy Reform in Israel

The “Review of Agricultural Policies: Israel” assesses the performance of Israeli agriculture over the last two decades, evaluates Israeli agricultural policy reforms and provides recommendations for continuing the reform process in the future. The evaluation is based on the operational criteria of decoupling, transparency, targeting, tailoring, flexibility and equity for good policy design as agreed by OECD Agriculture Ministers in 1998. These criteria, if implemented, would contribute to an economically viable sector within the wider economy that respects the environment and natural resources, ensures efficient use of inputs, and addresses social concerns, without resorting to production and trade distorting subsidies.

Israel is unique amongst developed countries in that land and water resources are nearly all state-owned. Another distinguishing characteristic of Israeli agriculture is the dominance of co-operative communities, principally the kibbutz and moshav. While the co-operative aspects of agricultural production management have gradually been replaced by more privatised management systems, these communities still account for about 80% of agricultural output.

Until the end of the 1980s, the government was heavily involved in regulating the agricultural sector through the provision of various subsidies, central planning of agricultural industries, allocation of production quotas, price controls and import protection. The macroeconomic policies introduced in the mid-1980s to quickly reduce and stabilise inflation rates, had a strong impact on agriculture with the sector having to adjust to significant increases in interest rates while suddenly facing growing debts. There were also other factors that stimulated agricultural policy reform. These included a more peaceful external environment compared to previous periods that allowed the agricultural sector and government policy to focus on what it could do well rather than being driven by self-sufficiency considerations. A huge wave of new immigrants from the ex-Soviet Union in the 1990s, increasing the population by almost one-fifth, amplified demand for housing and contributed to some relaxation of strictly regulated land transactions.

The relative importance of agriculture in the Israeli economy has declined over the last two decades, with its share in total employment and in domestic product falling to just under 3% and 2%, respectively, in recent years. Growing labour productivity was a key contributor to the almost two-fold increase in total factor productivity in agriculture in 1990-2008, much stronger than in any other sector of the Israeli economy.

This paper provides an overview of agricultural policy reform in Israel, its impact on agriculture and the environment, the challenges facing the sector and the suggested directions for further policy reforms.

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1 The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
How have previous policy reforms affected agriculture?

Since the late 1980s Israel has gradually removed policies based on the provision of subsidies, central planning of agricultural industries, allocation of production quotas, price controls and import protection. Objectives are being more effectively met by policies that better target the intended outcomes while generating fewer distortions to trade and resource allocation. But, the government still plays an important role in the agricultural sector as reflected in its involvement in allocating key factors of agricultural production: land, water and foreign workers. Indirect assistance to the agricultural sector is provided via the permit system for foreign workers. Agricultural producers are protected (but consumers taxed) by high tariffs on imports of the majority of agro-food products. Water and capital continue to be subsidised. Some sectors including milk and eggs are covered by sector-specific policy measures such as minimum guaranteed prices and quotas aiming at securing profitability of production for a majority of producers.

Even if agricultural policy reforms can be considered as partial, they have stimulated important structural changes in the farming sector. Since the beginning of the 1990s, there has been a large decrease in the number of farms, a corresponding expansion in farm size, a considerable reduction in the number of self-employed farmers, an increase in specialisation in agricultural production combined with growing pluriactivity among farm households. Farmers have moved into producing new crops that can respond quickly to market demand e.g. vegetables, or developed alternative income sources on-farm e.g. agro-tourism. There has also been substantial structural change in the organisation and responsibilities of various co-operatives servicing agriculture, with new, private enterprises emerging both in the upstream and the downstream sectors.

While the sector has shown a capacity to adapt to the challenges presented by the reforms, adjustments were not without cost, particularly in terms of loss of employment in agriculture. Fortunately, high rates of economic growth greatly assisted the transition, providing alternative employment opportunities for displaced workers and sources of income for farm households. Farmers have benefited from falling interest rates and a stable macroeconomic framework. Adjustments were also underpinned by advances in technology due to research and development, agricultural training, effective transmission of research results to the farm level, partly through highly qualified extension workers, the high level of managerial skill of Israeli farmers, and their ability to adopt innovative technologies.

Overall, agricultural output expanded by 60% during the period from 1990 to 2007, with livestock and crop output growing equally. However, a deficiency of water resources, with two-thirds of the land area defined as semi-arid or arid, exposes agriculture to risks from changing weather conditions and leads to large year-to-year fluctuations in volumes produced. Nevertheless, the 2.2% average annual growth rate of agricultural production over the period of 1990-2008 is above the rates registered in most OECD countries and significantly above Israel’s population growth.
Partial trade liberalisation and some progress in domestic policy reforms contributed to stronger integration of the agro-food sector with international markets. This is demonstrated by a high ratio of agro-food exports to the value of agricultural net domestic product (ANDP) at around 80%-90% and for imports at 130%-170%. Both ratios are significantly higher than the averages for the whole economy. Despite a large increase in the value of agro-food exports, in particular at the beginning of the 2000s, Israel has been a net importer at around USD 1 billion a year. In recent years, the net deficit has even tended to increase, mostly due to a stronger increase in prices for imported agro-food products than for exports, but also to a significant fall in crop production in 2008 (Figure 1).

**Figure 1. Israel’s agro-food trade, 1995-2008**

Israel’s agricultural exports reflect its advantages in season and expertise - mainly winter vegetables, potatoes, seeds, tomatoes, flowers, and fruit, all of which are produced mostly for European markets. Israel has also been a large exporter of agricultural technologies and inputs. These were valued at USD 2.2 billion in 2007, even more than total agro-food exports. Livestock production, heavily dependent on imported grains, is predominantly destined for the domestic market with livestock exports accounting for just 2% of total agro-food exports in 2006-08. Over time, there has been a long term downward trend in citrus exports and an expansion in other horticultural exports, in particular of peppers and potatoes.

The main agricultural imports are cereals, bovine meat, oilseeds, sugar, tobacco, fish, and tropical products such as cocoa for further processing by the food industry. Imports tend to reflect Israel’s disadvantage in products based on extensive use of land. Net imports of cereals, sugar and beef account for around 90%, 90% and 50%, respectively, of total domestic use of these products. In turn, Israel is practically self-sufficient in the production of milk, poultry and eggs, largely due to high border protection and commodity-specific support programmes.
Overall, Israel has made significant progress in achieving its agricultural policy objectives. It has achieved self-sufficiency in those agricultural products that can be produced in Israel and has successfully promoted exports of fruit and vegetables, benefiting from favourable climate conditions, advanced technologies and accumulated farm management expertise. The agricultural sector has benefited from high levels of investment in research and development, well developed education systems and high-performing extension services. Israel is a world leader in many aspects of agricultural technology, particularly those associated with farming in arid conditions.

Progress in agricultural policy reforms is indicated by the fact that the level of support to agricultural producers has decreased gradually and that the cost of the support to the overall economy has been reduced. These changes are captured by the OECD indicators showing the share of support in farmers’ gross receipts (% PSE - Producer Support Estimate) and support for the whole agricultural sector (%TSE - Total Support Estimate) expressed as a percentage of GDP. Both indicators have decreased since 1995, with the level of the %PSE at 17% and %TSE at 0.7% in 2006-08, compared with an OECD average of 23% and 0.9%, respectively (Figure 2).

Figure 2. Producer Support Estimate by country, 2006-08

As per cent of gross farm receipts

Note: PSEs for Brazil, Chile, China, Russia, South Africa and Ukraine are calculated for 2005-07.

While the level of agricultural support has been falling, the PSE results show that the share of the most distortive types of support has increased over the last two decades. This mostly reflects continued high border protection for agricultural commodities pushing domestic prices above international levels and resulting in high market price support. Such policies impose also relatively high implicit tax on consumers, higher in Israel than the OECD average. Furthermore, while on-farm budgetary support to agricultural producers has fallen and remained relatively low in recent years, around two-thirds of it is provided through payments for variable or fixed inputs that are (with market price support) known to have low transfer efficiency, meaning that only a small fraction of the transfers from taxpayers ends up as farmers’ income.
Detailed analysis shows that support coupled to production (the Producer Single Commodity Transfers) as a share of commodity gross farm receipts is highest for livestock commodities, in particular for poultry, beef and sheepmeat. This reflects limited or absence of reform in this sector. Reforms undertaken so far were oriented towards increasing efficiency and compliance with environmental standards of production, but with the production planning system remaining intact. For example, while important reform efforts have been undertaken in the dairy and, more recently, egg sectors, they remain subject to production quotas, farmers are guaranteed minimum prices fixed by the government and benefit from income and investment support as well as from high border protection against international competition.

The dominant environmental issue for the agricultural sector concerns its use of water resources, as agriculture accounts for over 50% of annual water consumption. Water policy reforms have addressed the growing pressure on water resources, in part, by raising the real price of water charges to farmers so they reflect an increasing share of the full costs of supplying water to agriculture. This has helped toward more efficient use of water by agriculture, while the value of irrigated output per cubic of water applied has increased (Figure 3). The reforms have also had success in reducing the use of scarce freshwater resources by agriculture, while increasing the supply of recycled effluent water available to the sector.

**Figure 3. Trends in irrigated crop output value and agriculture fresh water prices**

Source: OECD, 2009.
Water management in agriculture is also concerned with water pollution, and efforts to control of pollution have recently involved environmental measures as part of the broader dairy sector reform, in particular, upgrading of manure waste and effluent treatment. Use of pesticides is also being curbed through wider adoption of Integrated Pesticide Management, bio-controls and organic farming. The complex policy and institutional framework governing the control of water pollution across the economy, however, is complex and needs streamlining. Also measures and enforcement of current regulations to deter pollution mainly impact the livestock sector, but should encompass the whole agricultural sector.

Combating land degradation and desertification is important in the arid areas of the country. This is being addressed through programmes to improve soil conservation, drainage and proving support for low/no-tillage equipment. Existing policy measures to address various forms of land and soil degradation processes, however, could be supplemented by encouraging greater uptake of conservation tillage practices and developing the potential of managed grazing systems in semi-arid areas.

Biodiversity has also been adversely impacted by agriculture while the transfer of land from agricultural to urban use is raising concerns about protecting open spaces (cultural landscapes). Some of these concerns might be addressed by establishing a set of targeted agri-environmental policy measures, such as payments for ecosystem services. Also planning regulations for farmland valued for biodiversity and open space qualities could be better enforced, to prevent its unauthorised sale and development.

Agriculture also gives rise to air pollution, especially ozone depletion from use of the pesticide methyl bromide. While there has been a considerable reduction in methyl bromide use in agriculture, a greater effort, however, could be made to meet Israel’s commitment under the Montreal Protocol to completely abandon production and use of methyl bromide by agriculture.

Agriculture’s share in total greenhouse gas emissions is small at 4% in 2006. However, policy approaches in agriculture that might contribute to mitigating greenhouse gas emissions and help adapt agriculture to climate change, might involve preparing a targeted policy framework to address climate change mitigation and adaptation policies for agriculture. A cost-benefit analysis of different climate change strategies in agriculture could also be undertaken, as well as analysing the potential economic and environmental benefits of using agricultural wastes to generate renewable energy, as already achieved for biogas generated from dairy cows.
What are the main challenges for the future?

While reforms undertaken so far have brought a number of positive changes in the sector and helped achieve a large part of stated policy objectives, further agricultural policy reforms are needed to reduce the cost to consumers and taxpayers and to improve the efficiency of the various policy measures applied. These reforms should include:

- reductions in administrative costs associated with agricultural land market transactions;
- better enforcement of labour market legislation;
- reduction and simplification of agricultural import tariffs;
- implementation of less distortive policies for the livestock sector.

Moreover, as Israeli agriculture relies not so much on a “natural” comparative advantage in farming, but rather on an “induced” comparative advantage built on technological progress, the future success of Israeli agriculture and further productivity gains will rely heavily on ensuring an effective system of research, development and technology transfer and on maintaining well established extension services for farmers.

A key challenge for Israeli agriculture will be to reconcile producing enough to feed a growing population with greater public expectation that agriculture should improve its environmental performance. As agriculture is the major consumer of water and in view of projected climate change impacts, further efforts are needed to improve water use efficiency, such as:

- meeting the agreement conditions between the government and farmers in 2006 to further increase water prices to cover average costs of water production by 2015;
- ensuring that regional and seasonal variation in the cost of supplying recycled effluent water is reflected in water charges to farmers;
- exploring the possibilities of trading water quotas between different agricultural producers and over the medium term with other water users, including use for environmental needs;
- eliminating the water extraction levy concession to better deliver the sustainable use of groundwater; and,
- improving hydrological information to better guide policy makers in the allocation of rights to use groundwater.

There are also other policy measures and approaches that could be considered to improve the environmental performance of agriculture and to address future challenges, such as:

- moving toward greater policy integration and coherence across agricultural, environmental, water and energy policies which could provide environmental co-benefits;
- ensuring greater integration of urban and industrial planning regulations with agricultural policies that are seeking to protect biodiversity and open spaces related to agriculture;
- improving monitoring data sets, related to water pollution; land degradation; biodiversity; open spaces; and a full inventory of greenhouse gas emissions and sequestration; and,
- monitoring and evaluation of the economic efficiency and environmental effectiveness of agri-environmental policies, and cost-benefit analysis of measures before their introduction.
For more information

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For further reading

Websites:
www.oecd.org/agriculture/pse
www.oecd.org/agriculture/policies
www.oecd.org/tad/env/indicators
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