Assessment and recommendations

Israel is a small, open economy that grew at a relatively fast pace for much of the 2000s. The population is increasing more rapidly than the OECD average. With a relatively small, densely populated, water-scarce territory and a highly urbanised population, pressures on the environment are often intense.

Since 2003, government ministries have been required to prepare sustainable development strategies. This has helped to raise environmental awareness in line ministries, and to foster analysis of how potentially negative environmental impacts of sectoral policies could be mitigated. However, the quality of ministerial strategies has been mixed, implementation has often been slow, and monitoring and follow-up mechanisms have often been insufficient. The information base on economic aspects of environmental policy is still weak, as are the capacity and requirements for conducting economic analysis that are needed to better integrate economic and environmental decision making.

Public expenditure on environmental protection has been at about 1.6% of civilian expenditure since 2000, in line with the share in many other OECD countries. The government budget for environmental purposes has increased significantly over the last decade, but accounts for a minor share of the total government budget. Some dedicated environmental funds, especially the Maintenance of Cleanliness Fund, have provided supplementary and relatively secure sources of funding for environmental protection. However, there is a risk that such funds will lock in spending commitments and reduce the overall efficiency of revenue allocation. Their use should be subject to periodic assessment to make sure that their continuation is justified, and that they are achieving their objectives efficiently and effectively.

In the context of a fiscal policy that has prioritised reduction of the public deficit, Israel has made greater use of environmentally related taxes and other economic instruments, including a landfill tax and a water extraction levy. The inelasticity of demand for private car transport, partly due to inadequate development of public transport, implies that vehicle and fuel taxation is an important source of revenue, but also that it does not substantially affect vehicle usage and associated environmental impacts. Revenue from these taxes (in real terms) increased by more than 50% between 2000 and 2009. In 2009, they accounted for about 3% of GDP and 10% of total tax receipts, among the highest shares in the OECD.

The vehicle tax is well designed from an environmental point of view and has encouraged a shift towards smaller and "cleaner" vehicles. However, it is relatively high compared to taxes on other goods. It could be reduced, for example with a corresponding increase in fuel taxes and road charges to better target actual car and road use. The environmental effect of this measure would be enhanced to the extent that efficient and reliable alternatives to private car transport are made available. Such a shift should be accompanied by measures to compensate poorer population groups for the impact of higher fuel prices. Taxes on transport fuels are relatively high in comparison with those in many other OECD countries. Petrol-diesel tax parity has nearly been achieved. It is commendable that the excise duty on coal was increased five-fold in 2011, which will encourage a shift away from coal in electricity generation.

However, taxes on energy products for stationary purposes should better reflect the fuel carbon content, as well as other environmental externalities.

A number of support schemes and tax breaks currently in place provide environmentally harmful incentives to production and consumption. In particular, diesel for commercial use benefits from partial tax rebates; support to agriculture is mostly coupled with production; and car allowances for banking and civil service employees and the tax treatment of company cars overly encourage car ownership and use. The Ministry of Environmental Protection should be commended for undertaking a first study of environmentally harmful subsidies in 2011. Removing environmentally harmful subsidies and expanding the use of green taxes could contribute to the government's objectives of reducing public debt while cutting income taxes.

Israel has sizeable innovative and high-tech sectors and strong potential in the field of environmental technologies. The "clean-tech" sector has been growing in recent years, mainly driven by increasing global demand, and is specialised in water and renewable energy technologies. Progress in this area has been supported by environmentally related policy measures, such as increased water prices and renewable energy support, increased public R&D funding and targeted assistance programmes. Nonetheless, domestic demand for environmental technologies is generally low, partly due to the relatively slow implementation of environmental regulations and standards. The demonstration and commercialisation of new environmental technologies could be better supported. In addition, the clean-tech industry is made up of relatively small businesses that have difficulty accessing credit and venture capital.

A number of measures have been taken to encourage good environmental performance in the business and financial sectors. Nevertheless, the environmental review criteria and procedures for Israel's trade and investment policies and practices should be

strengthened. This includes future Free Trade Agreements, as well as grants and insurance coverage provided to industry under export credit programmes.

Recommendations

- Develop a whole-of-government approach to sustainable development and green growth; fully integrate environmental and green growth considerations into the government's development strategies; establish clear performance monitoring and follow-up mechanisms.
- Enhance the use of economic assessment tools in developing public policies, and ensure that environmental costs and benefits are fully taken into account; prepare consistent evaluation guidelines for this purpose; improve the scope and quality of statistical information concerning the economic aspects of environmental policy (notably expenditure, revenue, employment and eco-industries).
- Follow up on plans to introduce environmentally related taxes and economic instruments (notably the proposed air emission levy, coastal and marine protection charges, and the marine pollution levy), and gradually remove tax concessions that are potentially harmful to the environment (including concessions on the water extraction levy for farmers and on the diesel excise duty for commercial use).
- Review the tax treatment of company cars, with a view to eliminating the perverse incentives that result in increased car use and environmental impacts; replace the current car allowance for some services and public employees with other forms of compensation that are not linked to car ownership.
- Strengthen the mix of policies to support the commercialisation and diffusion of environment- and climate-related technologies, including more effective and efficient implementation of environmental policies, well-designed public procurement and targeted financial support.

Box 1.2. **Green public procurement**

In 2009, the Israeli government launched a green procurement initiative to promote the use of recycled materials in all ministries and affiliated bodies. Environmental criteria are already incorporated into the public procurement of several products and services (*e.g.* computers, printers, recycled paper, etc., and hybrid vehicles) through the Governmental Purchasing Administration. Starting in 2010, environmental criteria are to be incorporated into the purchasing process for approximately ten additional products each year, including those most commonly purchased by government bodies. Recycling of paper and electronic equipment is also encouraged within the government. The government is considering the establishment of environmental criteria for public tenders, especially those for infrastructure projects, and the incorporation of environmental risk management into the activities of the Public Companies Authority. In addition, the MoEP will issue environmental guidelines for the procurement of goods and services addressed to public entities other than government ministries and affiliated bodies, such as local authorities, hospitals and the police force, as well as to private operators. All these measures would expand the domestic market for environmental products and services.

3. Integrating environmental and fiscal policies

3.1. *Budget and expenditure for environmental protection*

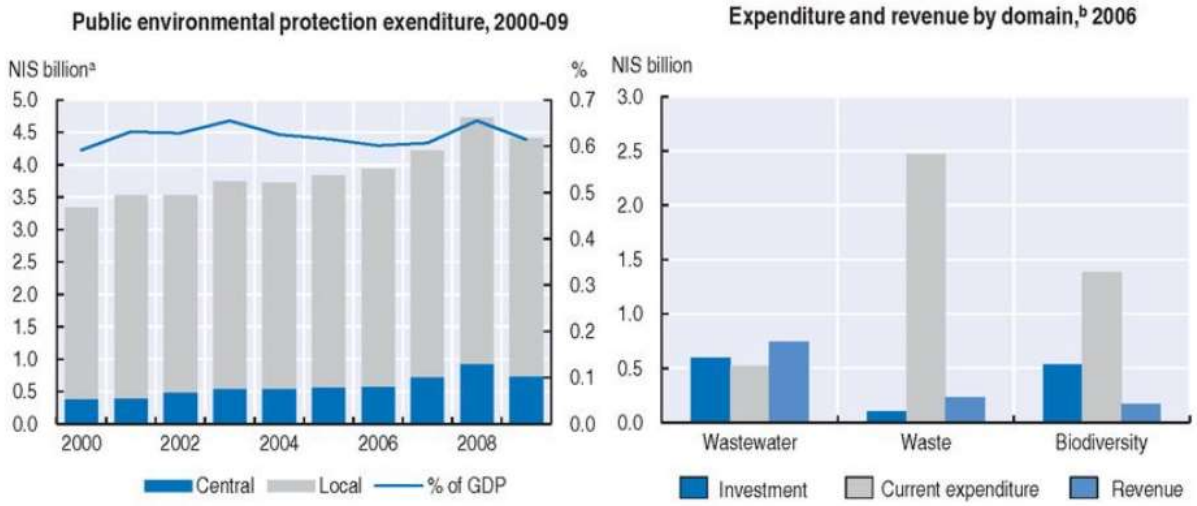
General government expenditure as a share of GDP has continued to decrease since 2000 as a result of a consistent policy of budget discipline introduced in the mid-1980s. At around 45% of GDP in 2009, total public expenditure is in line with the OECD average. The composition of expenditure has remained fairly constant over time, indicating that fiscal tightening has been spread more or less evenly across ministries. This may have led to sub-optimal allocation of resources. Public spending cuts are likely to have hampered infrastructure development, the quality of public services, and measures to alleviate poverty (OECD, 2010a).

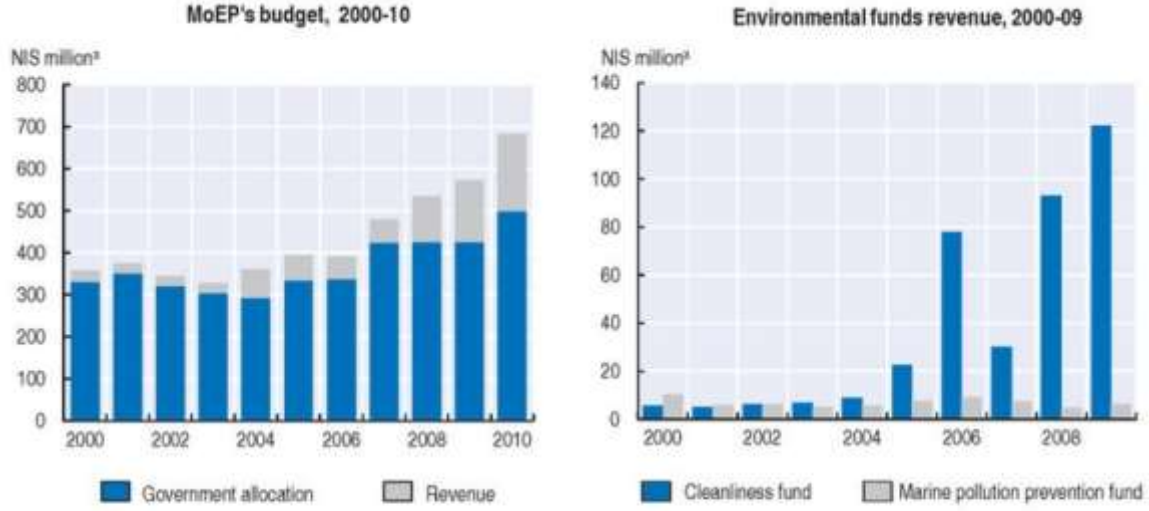
Data on environmental protection expenditure are still only partially available in Israel. Expenditure by the private business sector is not surveyed. Although many ministries have environmentally related public expenditure, data do not include this expenditure by public institutions and agencies whose main objective is not environmental protection (Chapter 2). To a certain extent, this mirrors the government budgeting process, with the budget for environmentally related activities being split among different ministries, in some cases entailing duplications and overlaps (*i.e.* when several ministries budget the same activity) (Levtzion-Nadan, 2006). Israel is also at a very early stage of developing environmental national accounts. Lack of data prevents a comprehensive view of environmental spending in the public and private sectors, and a comparison of such spending with changes in the quality of the environment, in order to assess policy effectiveness.

According to the classification by governmental function of the national accounts (COFOG), public expenditure on environmental protection[2] increased steadily between 2000 and 2008 and then declined in 2009, probably as a consequence of budget cuts linked to the economic slowdown. Overall, public environmental expenditure increased by 35% in real terms during this period. However, it remained at around 0.65% of GDP, below the OECD average (0.8% in 2009) (Figure 1.3). Public expenditure on environmental protection has remained at about 1.4% of total government expenditure since 2000, or 1.6% of civilian expenditure (excluding Israel's sizeable expenditure on defence), in line with the share in many other OECD countries.

As in most other OECD countries, the vast majority of public environmental expenditure occurs at the local level, although this includes substantial financial transfers from the state budget. Unlike in most other OECD countries, the share of expenditure at the local level has progressively decreased over time: for instance, it was 92% in 2000, reaching about 85% in 2009 (Figure 1.3). Public specialised producers[3] account

Figure 1.3. **Expenditure on environmental protection**





a) Constant 2005 prices.
b) Expenditure and revenue of public specialised producers of environmental protection services (wastewater and waste management) and of the public sector (biodiversity).
Source: CBS; MoEP; Ministry of Finance; OECD (2011), *OECD National Accounts Database*; OECD (2010), *OECD Economic Outlook No. 88*.

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for a large share of expenditure, although there could be substantial transfers from the budgets of central and local governments. These providers include the National Water Company, *Mekorot*, which treats about 40% of Israel's wastewater as well as supplying water,[4] and the newly established municipal public-private Water and Sewerage Corporations (Chapter 4).

There is clear specialisation of expenditure by environmental domain and by spending sector. The public sector (which includes the central and local governments and government agencies) focuses on the protection of biodiversity and landscape, which accounts for about 80% of total expenditure, while its expenditure in the waste and water sectors is negligible. Public specialised producers (utilities) focus on wastewater and waste: expenditure on wastewater accounts for 70% of public producers' expenditure. The remainder is accounted for by the waste sector. This specialisation remained fairly constant over the decade, both between spending sectors and between environmental domains.

The share of investment in public sector expenditure decreased during the decade, with investment accounting for about one-quarter of expenditure by the public sector in 2006. Investment accounted for a more stable share of total expenditure by public producers (about 20%). However, investment accounted for more than half of expenditure on wastewater treatment, indicating an ongoing effort to expand and upgrade wastewater treatment facilities (Chapter 4). Revenue from wastewater and waste service provisions has increased considerably (in real terms) since the mid-1990s. However, in 2006 revenue was sufficient to cover current expenditure only in the wastewater sector; revenue generated by waste and nature conservation services covered a marginal share of their respective expenditure (Figure 1.3).

The MoEP's budget increased significantly over the decade in real terms (Figure 1.3), but it accounted for less than 0.01% of the total government budget in 2008. Its budget is much smaller than those of most other ministries. In addition to the funds allocated to the MoEP by the government, its revenue sources include some dedicated funds, such as:

- The Maintenance of Cleanliness Fund, which mainly supports the waste sector, including the prevention of waste dumping and the treatment and recycling of waste. Funds are generated from fines for environmental offenses, fees on beverage containers and the landfill levy (Section 3.2). The latter has provided an increasing share of the Fund since its introduction, from 64% in 2007 to 90% in 2009 (Chapter 7).
- The Marine Pollution Prevention Fund, which is the main source of funding for the MoEP's activities concerning the marine and coastal environment. It collects the revenue from fines for non-compliance with marine pollution prevention legislation and the marine environment protection fee (Section 3.2).

The environmental funds have acquired growing importance as a source of funding for the MoEP's activities (Figure 1.3). Other funds for environmental protection include the Quarry Reclamation Fund, managed by the Ministry of National Infrastructures to finance the rehabilitation of disused quarries. It collects revenue from the fee paid by quarry operators (Section 3.2).

These dedicated funds, which are a secure source of funding for environmental protection and restoration programmes, supplement the often limited government budget for environmental purposes. However, earmarking the revenue from levies and fees for dedicated funds could lock in spending commitments, reducing the flexibility of fiscal decisions and, therefore, the overall efficiency of revenue allocation. The use of such funds should be subject to periodic assessment, to make sure that their continuation is justified and that they are efficiently and effectively used to finance measures with the highest economic and environmental returns.

The "green" dimension of recent government budgets

The Israeli economy experienced a relatively mild downturn in the wake of the 2008 global financial and economic crisis. Prompt action with regard to monetary policy and several government measures to assist the corporate bond market, businesses and households helped cushion the recession and stimulate a quick recovery (Box 1.1). The government implemented a relatively modest stimulus package in the two-year 2009-10 budget, prudently estimated at 0.5% of GDP, which was not fully utilised (OECD, 2010a). The largest measure in the package was accelerated investment in infrastructure (NIS 9.5 billion, or 1.2% of GDP). This included investment in public transport networks and

water infrastructure (Box 1.3). The 2009-10 budget also included R&D investments of about NIS 650 million (Chief Scientist Fund budget, Bio-Technology Fund, and Periphery R&D Fund) and support measures for the energy and agricultural sectors, which can have potential positive impacts on the environment (Box 1.3). Most of these investments were part of long-term investment plans and did not represent additional anti-cyclical spending.

Box 1.3. **Environmentally related investment in the 2009-12 government budgets**

Transport

- Rail inter-urban transport (NIS 5 billion in 2010 for electrification of the rail system). electrification is expected to contribute to reducing greenhouse gas emissions.
- Development of the rail system (NIS 1.63 billion in 2010, 2 billion in 2011-12).
- Other public transport (NIS 1.3 billion in 2010, 2 billion in 2011).
- Subsidies to public transport operators (NIS 2.6 billion).

Energy

- Renewable energy sources (NIS 25 million in 2010 to support private investment).

Agriculture

- Reform of the livestock sector (about NIS 45 million in 2010).
- Land conservation (NIS 17 million in 2010, reduced to 9 million in the following years).
- Pest control (NIS 30 million per year).
- Open landscape and grazing land management (NIS 19.5 million in 2010, falling to 11 million in 2012).

Water

- Extension and upgrading of wastewater treatment plants (NIS 242.2 million in 2010, increasing to nearly 400 million in 2012).
- Water supply (NIS 416 million in 2010, decreasing to 384 million in 2012).
- Financial assistance to operation of water and sewage systems (NIS 425.5 million in 2010, 457.6 million in 2012).

Source: Israeli government.

Among the revenue-raising measures introduced in the 2009-10 budget were a permanent increase in the excise duty on petrol, reform of the vehicle purchase tax, and a temporary increase in water charges for domestic consumption (the "drought tax") (Section 3.2).

3.2. Taxation policy and the environment

Government policy to reduce the tax burden resulted in a decrease in the tax revenue to GDP ratio in the 2000s. In 2008, this ratio was about 34%, in line with the OECD average. Internationally, by comparison, the Israeli tax mix tends to rely more on property taxes and indirect taxation (VAT and other taxes on goods and services) (OECD, 2010a). Taxes on goods and services in 2008, including those on energy and transport, accounted for 37% of total tax revenue (compared with the OECD average of 32%).

Israel has made progress in applying environmentally related taxes, and there is an ongoing discussion within the government on further use of these instruments. In 2005, an inter-ministerial committee on green taxation, headed by the Ministry of Finance (Tax Authority), was established to explore the use of taxation to achieve environmental policy objectives, initially in the transport sector and subsequently in the energy sector. The work of this committee has resulted in the introduction of several sector-specific measures, including the reform of vehicle taxation (see below). The Ministry of Finance is also expected to formulate recommendations on the use of direct and indirect taxation incentives to reduce GHG emissions by August 2011. Indirect taxation, especially environmentally related taxes, may make a substantial contribution to the government's objectives of reducing public debt on one hand, and cutting income taxes on the other, especially when the scope for further reducing public spending may be limited. The regressive nature of such taxes should be addressed through targeted social benefit schemes.

As in all other OECD countries, environmentally related taxes largely coincide with taxes on energy use and vehicles. Revenue from environmentally related taxes (in real terms) more than doubled between 2000 and 2009, despite a slight decrease in 2009 due to the impact of the economic slowdown on overall tax receipts. The role of such taxes has increased since 2000. Their share in both GDP and total tax receipts has grown steadily since 2001, reaching 3.1% of GDP and 10% of total tax receipts in 2009, among the highest level in the OECD (Figure 1.4).[5]

Inelasticity of demand for private car transport, partly due to the insufficient development of public transport networks and services, has turned vehicle and fuel taxation into a major source of tax revenue, but without affecting transport decisions and associated environmental impacts (BOI, 2011). Revenue from both energy taxes and vehicle taxes has increased considerably since 2000. In particular, fuel tax receipts have more than doubled due to progressive adjustments of the tax rates and increased fuel consumption. While fuel

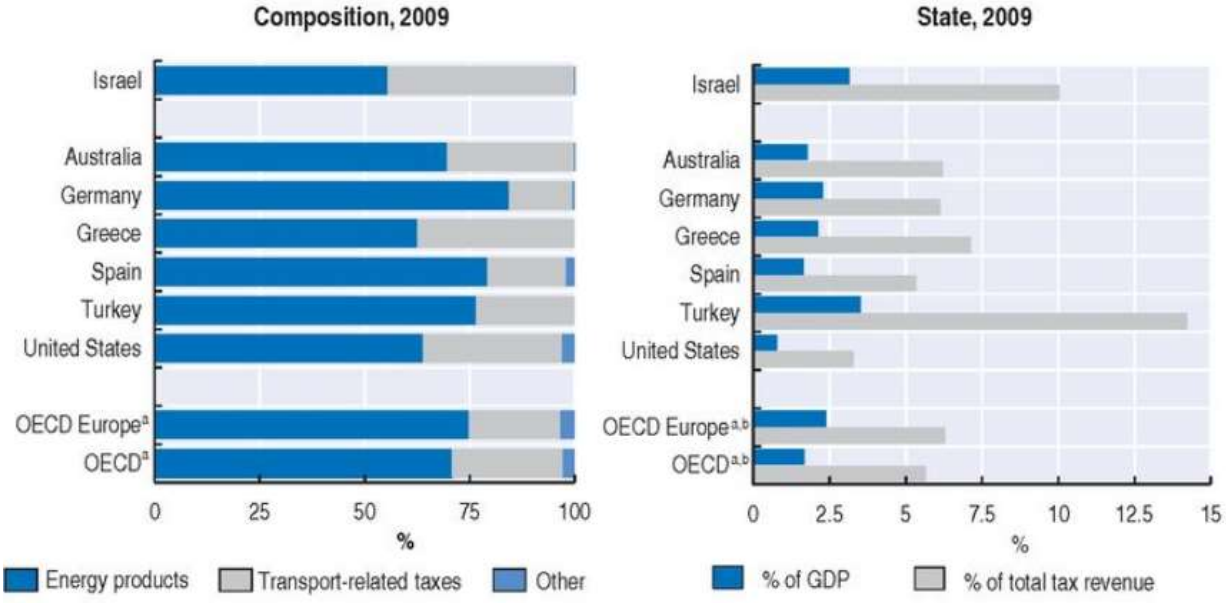
taxes have historically accounted for a smaller share of revenue than vehicle taxes, their share in total tax receipts grew steadily in the 2000s. At 5.5% in 2009, it was higher than the share of revenue made up by vehicle taxation (4.5%). As a result of rate increases (see below) and heavy reliance on road transport, Israel collects higher fuel taxes as a percentage of GDP than the OECD average. At the same time, high vehicle purchase taxes (see below) result in vehicle taxes accounting for a larger share of environmentally related tax revenue than in many other OECD countries (Figure 1.4).

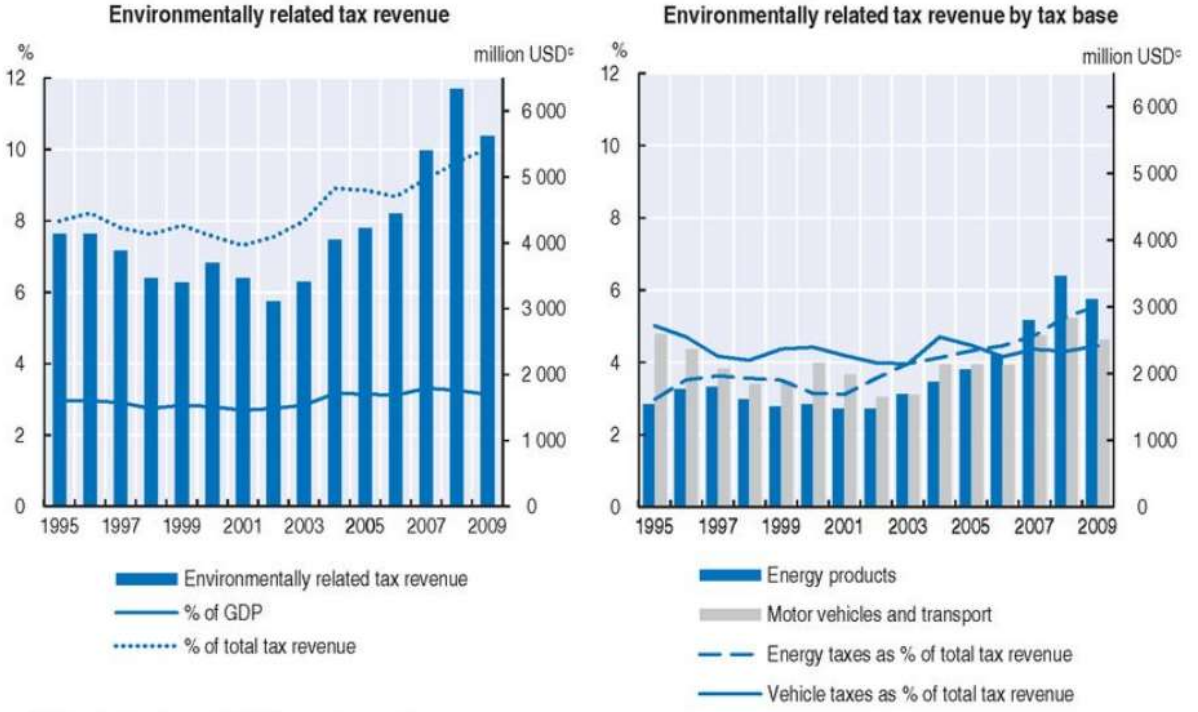
Taxes on energy products

Excise duties are imposed on fuels for stationary purposes (coal and natural gas for electricity generation, fuel oil for industrial use and electricity generation, and light fuel oil for domestic use) as well as on petrol and diesel for transport purposes.

Transport fuel prices and taxes increased substantially in the 2000s and are relatively high compared to those in many other OECD countries (Figure 1.5). The government's goal since 2005 has been to attain tax parity for petrol and diesel. In contrast with many other countries, in Israel biodiesel does not benefit from any tax exceptions. In January 2011, excise duties on fuels were raised by NIS 0.2 in the framework of the fiscal consolidation programme. However, in response to public protests, this increase for petrol (the most used transport fuel) was removed soon afterward although it remained in place for diesel. As a result, in early 2011 the excise duty on diesel was only about 5% lower than that on petrol and was among the highest in the OECD. However, the shares of taxes (including VAT) in petrol and diesel retail prices are around 56% and 52%, respectively, less than in a number

Figure 1.4. **Environmentally related taxes**





a) Data refer to all current OECD member countries.
b) Weighted average.
c) Constant 2005 prices.
Source: OECD/EEA database on instruments used for environmental policy; OECD (2010), *OECD Economic Outlook No. 88.*

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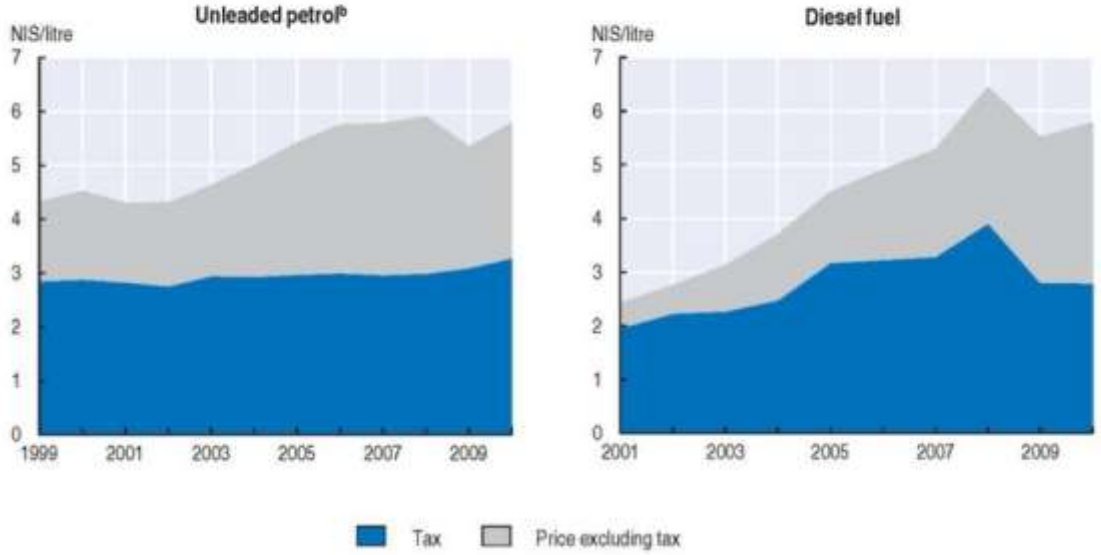
of other OECD countries (*e.g.* Germany, the Netherlands, Norway, Sweden and the United Kingdom), suggesting that there is some scope to further increase petrol and diesel taxation with a view to achieving the government's budget consolidation targets. This might prove difficult in practice, as shown by the 2011 public protests in the face of rising fuel prices and taking into account the current combination of relatively high fuel taxes and high vehicle purchase taxes.

Tax rates on fuel for stationary purposes have not changed much in the last few years, with the noticeable exception of that on coal, which used to be substantially below the rate applied to other fuels. Increased to NIS 43.3/tonne (from NIS 8.6/tonne) in 2011, it is now

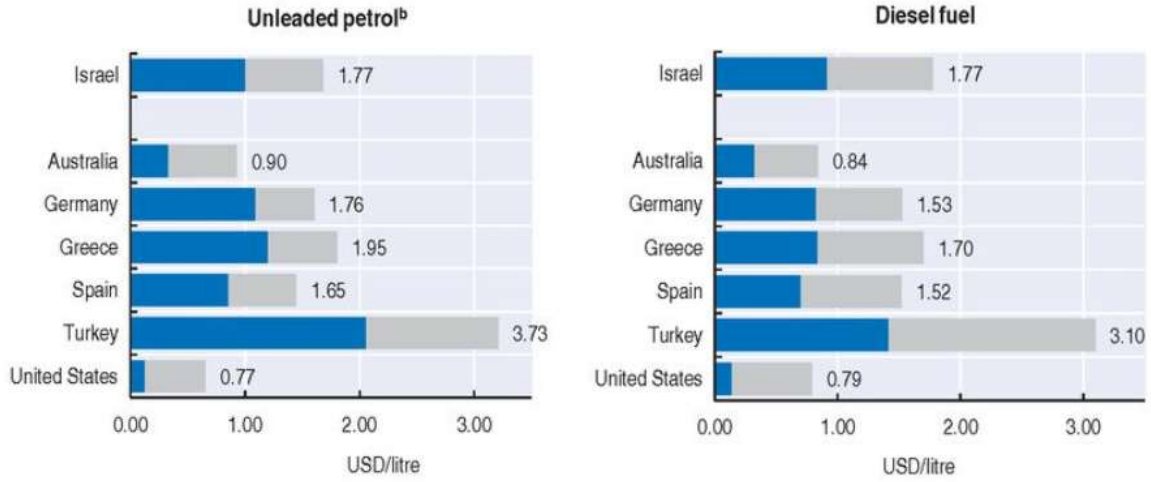
substantially higher than the excise duties on heavy oil and natural gas. This is consistent with the higher externalities generated by coal combustion (notably, the carbon content of coal is higher than that of natural gas) and may further encourage a shift away from coal-fired electricity production. However, excise duty rates on coal, oil and gas generally do not fully reflect the environmental impacts of fuel use. In particular, they do not include a carbon price. Palatnik and Mordechai (2010) found that a carbon tax (per tonne of CO_2 emissions) in Israel would significantly reduce emissions with only a minor economic impact, even if the rate of taxation were set at a relatively high level. In the absence of an economy-wide carbon tax, however, excise duties imposed on fossil fuels could be adjusted to reflect a carbon price component (Chapter 6).

Figure 1.5. **Road fuel prices and taxes**

Trends in Israel[a]



State,[c] 2010



a) At constant 2005 prices.
b) Unleaded premium (RON 95).
c) At current prices and purchasing power parities.
Source: OECD-IEA (2011), *Energy Prices and Taxes Database.*

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Vehicle taxation

Vehicle taxation has long been an important source of revenue for the Israeli government. Following the so-called "Green Taxation Reform" in August 2009, the vehicle purchase tax, which had been uniform, was differentiated on the basis of vehicles' environmental performance: the tax is calculated as a percentage of the vehicle pre-tax price (83%) net of a rebate based on a "green index". In practice, the effective tax rate varies from 40% for vehicles in the lowest emission category to 83% for those in the highest (i.e. zero rebate). Reduced rates apply to electric and hybrid cars (10% and 30%, respectively), implying quite substantial implicit subsidisation of these vehicles (OECD, 2011b).[6]

The "green index" system differs from similar environment-based vehicle taxes in other OECD countries, in that the index is calculated according to emissions of local pollutants (carbon monoxide, hydrocarbons, nitrogen oxides and particulates) in addition to carbon dioxide (CO_2) emissions. Emissions are weighted according to their respective social costs.[7] As a result, on average, the CO_2 emission level accounts for about 90% and 65% of the green index for petrol and diesel cars, respectively. This system gives car buyers less incentive to favour diesel over petrol vehicles, as opposed to tax differentiation based exclusively on CO_2 emissions. While this can reduce the potential climate change mitigation incentive, it avoids over-incentivising diesel vehicles in a country which suffers from relatively high air pollution and is prone to photochemical smog. The green index needs to be revised regularly to take account of improvements in vehicle technology. The green index is to be revised on the basis of updated estimates of the social, environmental and health costs of pollution from transport, to be produced by the MoEP in 2011.

While taxes on vehicle ownership are theoretically less economically efficient than fuel taxes and road charges in reducing emissions (OECD, 2009), in the first year of implementation this reform contributed to shifting purchase decisions towards more fuel-efficient, low-emission cars without major changes in tax revenue (Chapter 5). Rising fuel prices in the second half of 2009 and in 2010 may also have played a role. Moreover, the overall impact on emissions also depends on actual car use and, to date, this has not been assessed.

Vehicle taxation remains very high compared to international practice. The *OECD Economic Survey of Israel* (OECD, 2010a) recommended lowering the tax rate, due to its potentially highly distortive effects, while expanding the use of fuel taxes and road charges to target vehicle use. This recommendation is supported by an analysis by the Bank of Israel (BOI, 2010). It found that a relatively moderate increase in the petrol excise duty would reduce distance travelled more than an increase in the vehicle purchase tax generating a comparable revenue; it also found that an increase in the petrol tax compensated by a decrease in the vehicle purchase tax (so as to leave tax revenue unchanged) would reduce distance travelled.

Other environmentally related taxes, charges and fees

Israel has made progress in using taxation on products other than fuels and vehicles to achieve environmental objectives, as well as in using other economic instruments such as user charges and fees. However, such taxes represent a negligible share of environmentally related tax revenue and of GDP and their use could be extended.

In the waste sector, a landfill levy was introduced in 2007 with the aim of diverting waste disposal from landfill towards more efficient management and treatment systems.

Landfill operators are charged this levy per tonne of waste sent to landfill. The levy is differentiated by type of waste and landfill, with the highest rate charged for sludge and the lowest for construction and demolition waste. The rate on unsorted household waste was initially very low (NIS 10/tonne), but is set to gradually increase to NIS 90/tonne by 2015 (Chapter 7). Revenue is collected in the Maintenance of Cleanliness Fund (Section 3.1). In 2009, the levy covered about 12% of the average cost of waste disposal, compared to an average 50% in European countries, and did not fully reflect the externalities associated with landfilling (*e.g.* soil and groundwater contamination, GHG emissions) (BOI, 2010). A 0.25% fee on the sale or import value of beverage containers (paid by manufactures and importers) and a deposit/refund system for small beverage containers are also in place (Chapter 7). The landfill levy, together with other levies foreseen in legislation on packaging and tyres, are expected to increase the share of non-fuel and vehicle related environmental taxes in GDP to 0.16% in 2015 (BOI, 2011), from less than 0.05% in 2009.

In the water sector, in addition to water and wastewater charges, a water extraction levy is imposed on water consumers and partly reflects the scarcity value of water resources. The rate is higher for groundwater than for surface water, and is differentiated by sector: farmers pay a lower rate than domestic and industrial consumers (OECD, 2010c). The introduction of a marine pollution tax on direct sewage discharges to seawater is being considered (Chapter 4).

Other fees are imposed for the purpose of quarry restoration and marine pollution prevention. Quarry operators pay a fee calculated according to the type and quantity of material quarried and sold. Ships calling at Israeli ports and oil unloading platforms pay a marine environment protection fee, which varies according to the size of the ship and the

amount of oil. Both fees are paid into dedicated funds: the Quarry Restoration Fund and the Marine Pollution Prevention Fund, respectively (Section 3.1).

The introduction of other economic instruments is being considered. In particular, the Clean Air Law, which entered into force in 2011, allows for the introduction of a levy on air emissions from industrial facilities (Chapter 6). The government should implement such a levy, targeting priority pollutants emitted by large and medium-sized stationary sources. The possibility of introducing other charges for coastal and marine protection is being explored. They would be imposed on owners or operators of coastal facilities and marine installations which have potentially adverse effects on the coastal and marine environment.

The inter-ministerial committee on green taxation has estimated that introducing a tax on low-efficiency appliances would reduce electricity consumption by nearly kWh 7 billion over ten years, as well as reducing electricity peak demand. The option of introducing a tax on incandescent light bulbs (NIS 8) has also been discussed, with a view to fully banning them. In general, provided that consumers have adequate information about appliances' energy consumption, raising electricity prices so that they reflect the environmental impacts of appliance use would address such impacts more cost-effectively than taxing appliances. However, insofar as purchase taxes on durable goods are imposed for revenue raising purposes, differentiating these taxes according to energy efficiency (or, more generally, environmental performance) provides incentives to consumers to make more environmentally friendly purchases. It also helps to compensate for consumers' often imperfect understanding of the energy consumption consequences of their behaviour and short-sighted consumption decisions.

3.3. Environmentally harmful subsidies

The government provides various forms of financial assistance to businesses in a number of sectors. Tax exemptions are used extensively, but are often not economically justified or applied in a consistent manner (OECD, 2010a). Overall, while Israel is not more subsidy-oriented than many other OECD countries, some sectors (*e.g.* agriculture) benefit from relatively high levels of support. Some forms of assistance can be highly distortive and provide environmentally harmful incentives to production and consumption. Therefore, the government should consider removing them.

In 2011, for the first time, the MoEP undertook a survey of environmentally harmful subsidies. Subsidies to fossil fuel production and consumption, agriculture, and car ownership and use were identified. Surveying and quantifying such subsidies proved difficult, mainly due to inconsistencies in the legislative framework. Thus, the survey represents a commendable first step but does not provide a sufficient basis for identifying and assessing the environmental and economic impacts of environmentally harmful subsidies.

Fossil fuel subsidies

Diesel for commercial use (which accounts for nearly all diesel use in Israel) is partially exempted from excise duties. Freight transport, bus and taxi enterprises are entitled to a 45-50% tax refund. Off-road uses, *e.g.* in the agricultural and fishing sectors, are entitled to a 69% tax rebate. As in most other OECD countries, aviation fuel is exempted from taxation. Preliminary estimates indicate that revenue losses due to such exemptions and rebates have increased considerably since their introduction in 2005 and amount to about NIS 3 billion/year (Shmueli, 2011). In addition to representing lost revenue for the government, such rebates lower end-use energy prices and reduce incentives to use energy efficiently.

While many excise duties on fossil fuels were raised by NIS 0.2 in 2011 (Section 3.2), tax rates on petrol and petroleum coke remained unchanged. The tax rate on petrol was already relatively high, but that was not the case for petroleum coke, which is among the most polluting and carbon-intensive fuels. It is used almost exclusively in cement production and is completely imported. According to Shmueli (2011), lost revenue due to the exclusion of petroleum coke from the tax rise is NIS 33 million in 2011-12. This represents an implicit subsidisation of the use of such fuel instead of cleaner ones. The tax rate on petroleum coke is set to be gradually increased to NIS 78/tonne by 2014.

In December 2010, the government announced it would provide one-time incentive grants to companies switching from the use of petroleum fuels to natural gas. Some NIS 120 million (USD 35 million) was to be distributed in coming years to some 400 factories (OECD, 2011c).

Israel's concession-based regime for taxing hydrocarbon production, dating from 1952, was revised in April 2011. The previous system was particularly favourable to production companies in that it allowed for several deductions and tax breaks, which substantially reduced companies' tax liabilities. An OECD analysis (OECD, 2011c) estimated such tax benefits at more than NIS 700 million during the period 2004-09, which exceeded the government's revenue from royalties. In this respect, fossil fuel production was being subsidised. The new fiscal regime attempts to correct this type of distortion. It has significantly raised the effective tax on resources to a level much closer to that which is typical in other OECD countries (OECD, 2011b). The new regime is being applied to existing development projects and, in these cases, transitional provisions have been made to lighten the tax burden and encourage production and development.

Agricultural support

As in many other OECD countries, agricultural producers receive various forms of support. An in-depth OECD review of Israel's agricultural sector (OECD, 2010c) concluded that the level of support had declined since the mid-1990s, in terms of what is provided to farmers and the cost to the economy as a whole. In particular, support for farmers, as measured by the share of producer support estimate,[8] declined from 24% in 1995-97 to 17% in 2006-08. It is now below the OECD and EU averages (OECD, 2010c). However, according to the review, the composition of agricultural support has become increasingly distortive and is mostly tied to production levels, due to: *i)* high border protection for agricultural commodities, which pushes domestic prices above international levels; and *ii)* the large share of on-farm support provided through payments associated with production inputs. These forms of support can also be environmentally harmful since they stimulate production and input use, with potentially negative impacts on the use of water, land, fertilisers and pesticides.

Water, a key factor in agricultural production, is still heavily subsidised. Water support has decreased, especially since 2000, and water prices for agriculture have risen. However, farmers still pay water tariffs below those paid by domestic and industrial consumers and below the opportunity cost of producing freshwater. Furthermore, they pay a lower water extraction levy than industrial and domestic users, representing an implicit subsidisation of agriculture averaging NIS 90 million/year in 2000-08 (OECD, 2010c). A 2006 agreement between the government and farmers scheduled progressive increases in water charges, so that they would cover the average cost of water production by 2017 (Chapter 4).

Incentives to car ownership and use

Distortionary incentives for car ownership and use persist, with potentially negative environmental impacts. Employees in the banking and civil service sectors are eligible to receive a car allowance (for the maintenance of a private a car) as part of their salaries. A Bank of Israel analysis found that, as a result, in households with one member working in one of these sectors, the average number of cars is 12% higher than in other households. Replacing the allowance with forms of compensation not linked to car ownership has potentially high long-term costs, as including the allowance in the basic salary would increase the basis for calculation of pensions and other social benefits. However, this would reduce by about 10% the number of vehicles owned by employees in the banking and public sectors, which are mostly concentrated in large metropolitan areas and Jerusalem (BOI, 2008a). Removing the car allowance would have positive impacts on the environment, including lower emissions of GHGs and air pollutants (resulting from a reduction in car use) and of end-of-life vehicle waste.

The leasing arrangement and tax treatment of company cars also create an incentive for car use. The Bank of Israel (2008b) estimated that distance travelled by those holding a company car was 24% greater than that travelled by those who own their cars. Since company cars represent a large share of the overall car fleet, the total distance travelled was estimated to be 5% to 8% higher because of company cars. Employees have been (moderately) taxed on the benefits associated with company cars only since 2008. From 2010, the imputed taxable benefit for a company car holder is linked to the actual price of the car including the vehicle purchase tax, which varies according to emission levels (Section 3.2). This encourages companies to buy less polluting, more fuel-efficient vehicles. However, all the costs of company cars remain fully deductable from corporate taxation and, in particular,

there is no cap on deductable fuel expenses. In addition, leasing arrangements for company cars usually allow unlimited travel in return for a fixed payment. This implies that employers have no incentive to limit the use of company cars by their employees; hence, car holders do not face any additional cost linked to actual car use and have no incentive to drive less or more efficiently (Chapter 6). While it remains difficult to distinguish between personal and work use of a company car, some form of limitation on car use, *e.g.* in the form of a cap on tax deductable fuel expenses, should be considered.

Free parking for employees is also provided by many employers. For an employer, provision of parking space is an expense that is deductible from corporate taxable income; for an employee, it is a non-taxed benefit in kind. Employees who do not drive to work do not receive an equivalent benefit and are therefore discriminated against (BOI, 2008b). Not only does this form of subsidy encourage car use, but it encourages driving to work (*i.e.* mainly at rush hours and to/from particularly congested locations), exacerbating congestion, accident risks and environmental problems. Such incentives should be removed, *e.g.* by including the availability of parking spaces among taxable benefits in kind. The environmental effects of removing these distortionary incentives for car ownership and use would be enhanced to the extent that efficient and reliable alternatives to private car transport are made available (Chapter 6).

5. Corporate environmental responsibility and trade policy

In the second half of the 2000s, several initiatives were taken to encourage companies and financial institutions to better consider the environmental aspects of their activities. In particular, under the 2006 Law for the Encouragement of Capital Investment, provision of public grants to companies should take into account the environmental performance of the beneficiaries (*e.g.* their record of compliance with environmental legislation). However, this requirement has not been implemented yet and the related environmental guidelines are awaiting approval. Other initiatives include:

- the requirement for companies trading on the stock exchange to disclose environmental risk information to the Israel Securities Authority (in force since 2004, and revised in 2010);
- the Bank of Israel's guidelines on the assessment of environmental risks when granting loans to companies;
- the Ministry of Finance's guidelines on the management of environmental risks in financial institutions (pension funds);
- the Government Companies Authority's guidelines on sustainable development policies and environmental risk management in state-owned companies;

- the update of the Maala Index for Social Responsibility, which rates companies included in the Tel Aviv 100 Index according to four areas: human rights and the workplace, corporate ethics, community involvement and the environment. The MoEP has also been working on an environment-based ranking of companies listed in the Tel Aviv 100 Index.

Israel has been an adherent to the OECD Declaration on International Investment and Multinational Enterprises since 2002. The OECD Guidelines for Multinational Enterprises (part of the Declaration) are intended to encourage and assist OECD members to promote responsible business conduct, including in the field of the environment. In accordance with the Guidelines, Israel established a National Contact Point (NCP) within the Foreign Trade Administration of the Ministry of Industry, Trade and Labour. The responsibilities of the NCP include: publicising and providing information on the Guidelines within the business community; responding to inquiries; contributing to the resolution of issues relating to the implementation of the Guidelines; and reporting to the OECD.

The Israel Export Insurance Corporation, Ltd. (until 2005, the Israel Foreign Trade Risks Insurance Corporation) is responsible for encouraging exports by insuring medium- and long-term export credit transactions. Fully owned by the Israeli government, it is in the process of introducing requirements and procedures for considering environmental aspects when deciding on project support. This is in line with Israel's commitment, in the context of its accession to the OECD, to implement the 2007 OECD Council Recommendation on Common Approaches to the Environment and Officially Supported Export Credits by the end of 2011.[14]

Israel has Free Trade Agreements (FTAs) with eight partners.[15] Within the framework of the 2003 government decision on sustainable development, one of the responsibilities assigned to the Ministry of Industry, Trade and Labour is to ensure "The inclusion of environmental and social considerations in the consolidation of trade agreements and their implementation". However, no environmental annexes or stipulations are included in any of the existing FTAs or in other trade-related bilateral or multilateral agreements. This contrasts with practice in many other OECD countries, where environmental provisions are often included in FTAs (OECD, 2007).

3.4. Economic instruments

Economic principles for the conservation and sustainable use of biodiversity have been endorsed and accepted in Israel's biodiversity policy framework. They are reflected in Israel's guiding principles for sustainable development and are an important part of the National Biodiversity Strategy (NBS). The latter contains an entire chapter dedicated to the economic aspects of biodiversity conservation and acknowledges the economic perspective that biodiversity is an input for the production of ecosystem services (Section 2). Further, the NBS acknowledges the importance of cost-benefit analysis as a means to prioritise biodiversity policies as well as to assess the relative net benefits of alternative biodiversity policies. The NBS accepts the validity and usefulness of non-market valuation techniques, as it also acknowledges that biodiversity has a public good dimension and hence cannot be valued by market prices alone.

The NBS fully endorses the need to use economic instruments, both as a means to control environmental externalities and as a vehicle to provide incentives for the sustainable utilisation of biodiversity resources. Support for economic instruments (*e.g.* taxes, charges, fees and tradable quotas) in the NBS is mostly based on the potential cost-efficiency gains of internalising externalities (as compared to command and control regulation). Additional arguments could be used to justify the use of economic instruments, related to their dynamic long-term benefits (OECD, 2011).[3]

The NBS guidelines for using economic instruments are broadly in line with those described for other OECD countries in their Environmental Performance Reviews (OECD, 2009), with other national biodiversity strategy documents (Emerton, 2001), and with the OECD's *Green Growth and Biodiversity* report (OECD, 2011). While Israel has started to implement economic incentives in order to achieve environmental goals, *e.g.* in the water, waste, energy and transport sectors (Chapters 4, 6 and 7), the application of such approaches to biodiversity policy is lagging. Israel has a two-year timeframe (ending in 2011) to implement the OECD Recommendation on the Use of Economic Instruments in Promoting the Conservation and Sustainable Use of Biodiversity.

A major review and assessment of economic instruments and economic assessment tools will be part of the NBS's implementation (MoEP, 2009, 2010a). A policy aim of the NBS is to develop economic tools specifically for biodiversity conservation and sustainable use. In particular, biodiversity-related economic policy measures being contemplated include:

- The use of agri-environmental schemes that will pay farmers to change their agricultural practices in order to provide specific biodiversity-related ecosystem services. Various options for allocating such contracts are under consideration, including auctioning (Section 4).

- The development of markets for biodiversity conservation and sustainable use. Some of these, such as ecotourism, have already been developed while others are being considered (*e.g.* markets for certified biodiversity-friendly agricultural products).
- Levies, fees and fines. For example, the introduction of coastal and marine protection charges is being considered. The proposed levy for the protection of the coastal environment would be imposed on owners or operators of coastal facilities which damage this environment. The proposed marine charge would be paid by marine installations that have adverse effects on sediment transport along the shore. A fund for the protection of the natural landscape was established in 2010 and will be managed by the Israel Land Authority. Changes in land zoning will be subject to a fee to be paid to that fund. The fund will finance, among others, the protection of biodiversity and ecological systems.

There is further scope to apply economic instruments for biodiversity conservation. This should be complemented by systematic evaluations of the relative impacts of these policies on biodiversity. Moreover, the use of biodiversity offset market schemes (either for species or habitat restoration) could also be explored. Such schemes can be implemented through regulation or voluntary initiatives. They require developers that damage a habitat or ecosystem to buy a conservation or restoration "credit" that compensates for or offsets that loss elsewhere. Such schemes are being applied more widely in other OECD countries in contexts where there are strong economic development-biodiversity trade-offs. Regulatory approaches include wetland and conservation banking in the United States, the "no net loss of fisheries habitat" scheme in Canada, and the "green offsets" programme in New South Wales, Australia (Ten Kate *et al.*, 2004). The Business and Biodiversity Offsets Programme is a good example of a voluntary initiative (BBOP, 2009).

3.5. Public expenditure on biodiversity

Public expenditure on the protection and rehabilitation of space and habitats, and the protection of natural and semi-natural landscapes, dwarfs expenditure on other areas of environmental protection, at around 80% of public sector expenditure (excluding public service producers) (Chapter 1). This figure has remained roughly constant throughout the past decade.

Fiscal and monetary policy instruments endorsed by the NBS include public procurement and green national accounting. Work is being carried out on the greening of national accounting, although this is still in its early stages. Since 2009 environmental criteria have been included in the public procurement of several products and services (Chapter 1). There is scope to use public procurement for government agencies, hospitals, schools and the military as a vehicle for biodiversity conservation by introducing criteria, in tenders, concerning the degree to which the goods procured are consistent with biodiversity conservation objectives (*e.g.* biodiversity-friendly paper or food).