3.6 Expenditure, financing and pricing

Expenditure

Public and private expenditure on *waste water management* were estimated at 0.5% of GDP in 2002, a relatively low figure compared to other OECD countries. A large investment effort in sanitation infrastructure is still required in Belgium, and the investment will need to continue for a generation or so at present funding levels. For example, the report of the Belgian Court of Audit quotes an as yet unprogrammed investment of EUR 7 billion required to construct sanitation infrastructure for the Flemish population not yet served.

Financing of sewerage and waste water treatment systems

Limited progress was made since the previous environmental performance review of Belgium in achieving a greater *degree of cost recovery* in the *financing of sewerage and waste water treatment infrastructure*, which is currently on the order of one-third or less. During the review period, all three regions reformed their financing arrangements for waste water infrastructure investments to: i) relieve the general regional budgets from this investment burden, and ii) overcome the obstacles impeding progress in achieving the requirements of the EU Urban Waste Water Treatment Directive. Most of the revenue raised by the three regional governments from water pollution levies (Chapter 4) is now being transferred directly to the respective financing institutions (Brussels Fund for the financing of water policy, Aquafin and the SPGE). All three regions practise full cost recovery for the *production and distribution of drinking water*.

Wallonia now has in place a *coherent funding mechanism* designed to achieve full cost recovery, and waste water charges are expected to triple over the next ten years. In Flanders, waste water charges would need to double from their 2002 level, but the government has yet to release a long-term vision (first announced in 1997) on how this will be achieved; in the meantime, the gap is filled by regional subsidies to the water companies. In 2001, Brussels-Capital established a water policy fund to finance the construction of the collector system that takes untreated sewage from the region to the large treatment facility now being built just north of the capital. The fund is financed mainly by revenue from regional water pollution levies and a contribution from the Flemish Region, in recognition of the Flemish communities to be connected to the Brussels treatment plant.

Pricing water services to households

The *average price of water* in Brussels-Capital is about EUR 2/m^3, of which approximately EUR 0.7/m^3 is for sewerage and treatment and the rest for water supply. In Flanders, the median price for households is also about EUR 2/m^3 and includes a waste water charge of EUR 0.6605/m^3. Average prices in Wallonia rose by about 25% during 1996-2003 and amounted to EUR 2.34/m^3 in 2004; the waste water treatment component amounted to EUR 0.5229/m^3 in 2005.

Customers of water services receive *combined invoices* for supply and sewage

treatment in all three regions. The structure of water pricing in Wallonia is based on a calculation of two factors: one representing the true cost of water supply (the CVD, for *coût vérité distribution*, which includes the cost of protecting water intake areas) and a second one for sanitation (the CVA, for *coût vérité assainissement*).[16] Water bills have a fixed and a progressive, volume-based component. The fixed part is a calculated value based on the basin-averaged, true cost of both supply and sanitation. In Flanders, the cost of sewage treatment is calculated in terms of the number of pollution units, with the unit price adjusted annually and the same for both households and industry.

Pricing structures throughout Belgium have, since 2005, contained a *social component to keep water affordable for low-income groups* (Chapter 5) and a progressive component to encourage conservation. Brussels-Capital has instituted a "solidarity tariff" aimed at benefiting large families, which also retains a progressive structure as a conservation signal. In Flanders, access to drinking water is considered a human right and every inhabitant receives the first 15 m^3 per year free of charge. Since 2004, in Wallonia, water prices have included a charge of EUR 0.0125/m^3 destined for the Social Water Fund and to be distributed to low-income households that would otherwise find it difficult to pay their water bills (Ministère de la Région Wallone, 2005b); in 2004, 6 500 households received a total amount of EUR 867 000, which represented 63% of the net revenue collected through the charge that year. The Wallon government approved in March 2005 an international water solidarity fund to finance projects for providing water to citizens in developing counties that will be fully operated in 2007. A funding of about EUR 2 million is raised by the contribution of all the consumers (a charge of EUR 0.0125/m^3), on the same scheme as the Social Water Fund.

4.1 Agriculture

Little was achieved during the review period to meet the commitments of the Federal Plan for Sustainable Development (FPSD) and regional commitments[7] to reduce pesticide use, strengthen agri-environmental schemes and encourage organic farming. The intensity of *pesticide use* in Belgium (0.69 tonnes/km^2 of agricultural land) is still very high by OECD standards (Figure 2.6). The area under *agri-environmental measures*[8] (AEMs) remains low (10% of farmland in Flanders, 6% in Wallonia) (Chapter 4). By comparison, AEMs now cover more than a third of the EU-15 farmland. Only 12% of the Belgium area under AEMs is specifically targeted at landscape and nature conservation. The farmland enrolled in AEMs in Belgium increased only recently, in contrast with a significant increase in the EU-15 over the review period.

In 2004 *certified organic farming*[9] accounted for only 1.7% (i.e. some 24 000 ha) of Belgium's Utilised Agricultural Area (UAA), far below the FPSD target and EU-15 average of 4% for that year. The FPSD target for 2010 is 10%. Organic farming boomed following the food safety crises of 1999-2001, but has stabilised (and even slightly decreased) since 2002. It is not clear whether the current phase of consolidation for organic markets will lead to further growth of the sector. This will probably depend on future levels of agricultural policy support (Chapter 4). In 2004, EUR 26 million was spent on AEMs (of which the EU contributed EUR 14 million), accounting for 25% of the total expenditure under Belgium's rural development plan.

4.2 Sustainable forest management

The Belgian forest area has increased by only 1.5% (10 000 ha) since 1995, mostly on abandoned farmland, reflecting a very small uptake of EU support for farm forestry.[10] Most (80%) of the country's forests[11] are located in Wallonia, where they cover a third of the regional territory (Cellule État de l'Environnement Wallon, 2005). Overall, 56% of Belgian forests are privately owned (Figure 3.2). Priority tree species for afforestation are gradually shifting from conifers (pine, spruce) to broadleaves (oak, beech). In 2004, EUR 25 million was spent on *forestry in Wallonia* (of which EUR 3 million, in the framework of Belgium's rural development plan for 2000-06).

Certification of sustainable forest management (SFM) has developed significantly in recent years. As of January 2006, 45% of Walloon forests (i.e. 245 500 ha) were certified under the Programme for the Endorsement of Forest Certification (PEFC); 93% of these were public forests (PEFC, 2005). The number of PEFC-certified firms rose from 5 to more than 60 between 2003 and mid-2006. While the Walloon Region implements the PEFC, the Brussels-Capital and Flemish Regions apply Forest Stewardship Council (FSC) criteria. There are 6 000 ha of FSC-certified forests in Belgium and 85 firms have received a FSC chain of custody certificate. Both certification schemes are internationally recognised.

In comparison with traditional forest management, *PEFC certification* involves: i) greater diversity in the choice of tree species and, for a given species, allowing a mix of provenances in the same region; ii) a more diversified age structure; iii) maintaining some dead trunks after natural tree falls to enhance biodiversity; and iv) creating integral reserves (with no human activity) in areas of difficult access. PEFC certification involves less monitoring and reporting than *FSC certification* and is generally thought to be more suited to small forest holdings.

Measures have recently been taken to *further promote certification*. A PEFC Belgium website was launched in 2004 to raise awareness among private forest owners

and industry. Since 2006, federal public procurement of FSC- or PEFC-certified wood products has been made preferential, as is already the case in some other EU countries (e.g. Denmark, United Kingdom). Since November 2005, external audit in PEFC-certified private forests has been subsidised in Wallonia. This subsidy will be offered for the coming three years, until the market for certified wood products grows.

Measures have been taken to improve *game management*. Since 2000, agricultural policy has encouraged farmers to grow game covers (e.g. cereals and brassicas) on land counted as part of their set-aside commitment. In 2005 the minimum eligible area was decreased and administrative procedures were simplified to make the scheme more attractive (given its limited success). In Wallonia, an anti-poaching brigade was established in 2003 to prevent violations of the Nature Conservation Law, the Fishing Law and the Forestry Code. In that region, however, populations of large game have increased too rapidly (Figure 3.3), to the point of threatening forest regeneration. For instance, nearly 20% of young spruce stands have been damaged. The spread of large game partly results from hunting interests overriding sustainable forest management considerations. In Flanders, wildlife management plans and hunting schemes apply on 60% of the huntable space.

In *Wallonia*, forest biodiversity guidelines have been prepared to improve forest management. A decision was taken in 1997 to renew the management plans in all public forests by the end of 2006, and to promote the adoption of such plans in private forests.[12] However, by the end of 2005 only half of the public forest area had adopted new management plans, and there is no clear incentive other than PEFC certification for private owners to improve forest management. *Forest condition* (as measured by defoliation) improved significantly in the 1990s, especially for conifers, but it has deteriorated since 1999, especially for beeches, as a result of drought and biotic factors (Figure 3.3).

In *Flanders*, forests are very fragmented and 70% are privately owned. Private owners (of at least 5 ha) have been encouraged to share forest management by joining up in "forest groups" (De Schepper *et al.*, 2001). Financial and technical support is provided to the seven such groups that have been accredited so far,[13] to help them prepare SFM plans (on the basis of criteria for sustainable forest management). Forests included in the FEN are exempt from inheritance tax. Just 14% (5 700 ha) of the Flemish public forests are FSC-certified.

5. Expenditure and Financing

Public expenditure on biodiversity and landscape protection in Belgium amounted to EUR 130-150 million annually during 2000-03, an increase from EUR 90-110 million a year during 1996-99. The share of investment expenditure steadily increased, from 11% in 1996 to 44% in 2003 (Table 3.3). In Flanders, 80% of the expenditure on nature conservation was devoted to land acquisition and, to a lesser extent, NGOs. The extent of cost recovery has remained extremely low, with revenues on the order of EUR 2-3 million a year (Table 3.3).

Table 3.3 **Public expenditure on biodiversity and landscape protection**

(EUR million)

	1996		2003	
	Total	(%)	Total	(%)
Investment	10	*11*	56	*44*
Current	78	*89*	70	*56*
EXP1[a]	88	*100*	126	*100*
Subsidies/transfers	0		4	
Fees/purchases	6		10	
Revenues	3		2	
EXP2[b]	91		138	

a) "Abater" principle: expenditure for measures executed by the nature conservation sector itself (e.g. land acquisition).
b) Financing principle: EXP1 plus expenditure financed by others (through public subsidies or fees to specialised producers) less revenues (payments received for services, such as entrance fees).
Source: FPS Economy – Directorate-general Statistics Belgium; OECD.

As regards *sectoral expenditure*, Belgium spent EUR 26 million on *agri-environmental measures* in 2004, of which some EUR 3 million was specifically targeted at landscape and nature conservation. That year, Wallonia spent EUR 25 million *on forestry*, of which half was on operation and maintenance (forest management) and half on investments (afforestation). Revenues from *hunting fees* represent almost 20% of management income in public forests.

6.6 Official development assistance

As part of its official development assistance, Belgium provides support to help manage five *World Heritage sites* (national parks) in the Democratic Republic of Congo; during 2005-07 the support was increased to EUR 350 000/year (from EUR 200 000/year in previous years). Belgium also contributes EUR 1.7 million a year, as part of its contribution to the UN Environment Programme (UNEP), to strengthen capacity to *implement the Convention on Biological Diversity in four pilot countries* (Mozambique, Tanzania, Uganda and Rwanda). New bilateral co-operation programmes were launched between the end of 2004 and mid-2005 to promote sustainable development through *agro-forestry* and social infrastructure in the buffer zones of key protected areas in Ecuador and Peru (EUR 7.5 million over five years and EUR 2.5 million over four years, respectively).

3. Sustainable Development and Market-based Integration

The 2001 reform of the federal system in Belgium considerably *expanded the fiscal autonomy of the country's regions*. Applying the OECD typology to this new system, the proportion of tax revenue over which Belgian regions enjoy full autonomy is now 40% as compared to 8% previously. Some regions have used their increased autonomy. No change has yet occurred in the personal income tax or the taxation of vehicles (OECD, 2004). A modification of vehicle taxation would require a prior co-operation agreement between the three regions. Environmentally related taxes primarily concern the energy and the transport sectors.

3.1 *Energy taxes*

The *federal government* collects the main taxes on *energy and fuels*; these include excise duties on energy products, an inspection fee on domestic fuel oil and a levy on energy (both of the latter are now integrated into excise duties) (Tables 4.2, 4.3). In 1993, a special levy on domestic energy products was applied to gasoline, light heating oil, natural gas, liquefied petroleum gas and electricity; coal, social tariffs for electricity, and gas and diesel fuel were exempted. In practice, households have long been the primary contributors of the energy levy, while industry has been exempt (with the exception of its use of light heating oil). In 2003, the energy levy was extended to industry and diesel fuel ceased to be exempt.

Concerning the *value added tax* (VAT), electricity and natural gas for households have been subject to a 21% VAT rate since 1996. Gasoline is also subject to the general rate of 21%. There are no taxes on coking coal or steam coal for industry and electricity generation. A reduced rate of 12% applies to steam coal for households. In October 2005, the federal government introduced a set of measures to cushion the impact of rising oil prices on households. Between June and December 2005, whenever the price of heating oil exceeded the threshold of 0.5 EUR/litre, the government would compensate customers for a maximum amount equal to the 17.35% VAT of the household bills. Households have received EUR 100 on average. A similar measure was developed for natural gas in 2006.

Since 1993, an excise tax has been charged on *heavy fuel oil for industry* and electricity generation; the tax is differentiated according to the *sulphur content* of the fuels. In 1996, additional excise taxes were placed on road fuels. A ratchet system for excise duties on road fuels (both diesel and gasoline) was introduced in 2003: up to a certain limit, half of the yearly price drop could be offset by an increase in excise duties until 2007. However, because of the rise of oil prices, a reverse ratchet system was put in place in July 2005 and the old ratchet system was ceased two months later. Taxes on unleaded gasoline are higher than those on diesel fuel. Overall, *taxes on road fuels* in Belgium are comparable to those of neighbouring countries for gasoline and lower for diesel fuel (Figure 4.4).

In 2003, two *federal levies* came into force, one for electricity and another on natural gas, to finance certain public service obligations. Part of the federal levy on electricity is used to finance measures aimed at reducing greenhouse gas emissions through the Kyoto fund. Similarly, *regional levies* on electricity and natural gas suppliers are used in Brussels-Capital to finance the region's "Rational Use of Energy" subsidy scheme.

Table 4.2 **Environmentally related taxes**[a]

Tax	Tax rate	Comments
ENERGY		
Excise tax on road fuels		
Diesel	0.326 EUR/litre	
Unleaded petrol[b]	0.564 EUR/litre	
Excise tax on other mineral oils		
Light fuel oil	21 EUR/tonne	Rate is identical for households and for industry
Heavy fuel oil	15 EUR/tonne	Low sulphur fuel oil
LPG	–	
Methane	–	
Kerosene as fuel	0.5518 EUR/tonne	
Coal	0.0087 EUR/kg	
Energy levy		Applies to households
Unleaded petrol	0.0286 EUR/litre	
Diesel	0.0149 EUR/litre	
Kerosene as fuel	0.0286 EUR/litre	
Kerosene for heating[c]	0.0179 EUR/litre	
Light fuel oil[c]	0.0084 EUR/litre	+0.01 EUR/litre inspection fee[c]
Electricity[c]	1.9088 EUR/MWh	
Natural gas[c]	1.1589 EUR/MJ	
Butane[c]	17.1047 EUR/tonne	
Propane[c]	17.3525 EUR/tonne	
TRANSPORT		
Vehicle registration tax	EUR 61.50 to EUR 4 957	Increases with engine size
Annual motor vehicle tax	Cars/minibuses: EUR 58.44 to EUR 1 494.72/year	Increases with engine size
	Lorries: EUR 59 to EUR 552.11/year	Increases with weight
	Buses: EUR 51.713 to EUR 360.1309/year	Increases with engine size
	Tows: EUR 27.36 to EUR 56.76/year	Increases with weight
	Tractors: EUR 59.97 to EUR 808.01/year	Increases with weight
Supplementary annual motor vehicle tax	Cars/minibuses: EUR 89.16 to EUR 208.20/year	Applies to LPG vehicles; increases with engine size
Excise compensation tax	Cars/minibuses: EUR 40 to EUR 1 187.16/year	Applies to diesel vehicles; increases with engine size
Eurovignette[d]	Maximum 3 axles: EUR 850 to EUR 960/year Minimum 4 axles: EUR 1 400 to EUR 1 550/year	Lower rates for more stringent emission standards (EURO)

a) Rates as of January 2006.
b) 95 RON.
c) Companies having entered into a voluntary agreement or taking part in an emissions trading scheme may apply for tax concessions.
d) Pursuant to EU Directive 99/62/EC which applies to EU member states that do not levy tolls for the use of motorways (Belgium, Denmark, Luxembourg, the Netherlands and Sweden).
Source: FPS Finance.

Table 4.3 **Revenues from environmentally related taxes**, 1994-2003

('000 000 EUR)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excise duty on mineral oils	2 860	2 920	3 102	3 239	3 337	3 360	3 392	3 396	3 444	3 519
Inspection fee on light fuel oil	37	35	40	36	37	34	29	35	29	30
Energy tax on households	215	203	219	216	207	205	193	201	192	264
Annual motor vehicle tax (households)	564	589	653	702	677	813	756	776	796	849
Annual motor vehicle tax (industry)	318	307	327	344	323	388	376	381	392	417
Registration tax	189	184	212	195	214	235	209	268	252	248
Levy on car insurance premiums	416	417	440	430	423	427	446	464	476	500
Tax (excise) paid by households	0	0	121	131	137	144	133	163	167	175
Tax (excise) paid by companies	0	0	60	66	69	72	66	81	83	88
Contribution from electricity corporations	0	0	0	37	37	0	0	0	0	0
Contribution from the oil sector	0	0	0	0	0	0	0	0	0	21
Taxes on poster advertising	1	1	1	1	1	1	1	1	1	2
Eurovignette	0	84	78	84	88	82	82	90	112	81
Ecotaxes	–	–	–	–	–	3	2	2	–	1
Taxes on water	195	208	301	368	379	376	363	327	336	361
Regional tax (BR)	43	44	62	71	68	61	94	89	63	69
Tax on industrial waste products (FR and WR) landfill, incineration	81	90	104	122	92	100	74	72	69	75
Taxes on water (FR, WR and BR)	8	8	9	15	15	19	15	29	27	23
Tax on household waste (RW)	19	22	32	17	24	25	20	31	15	12
Tax on manure (FR)	4	4	1	9	5	2	11	5	5	4
Flat-rate regional tax (BR)	0	0	0	0	0	0	0	0	65	62
Non-earmarked municipal taxes related to environment[a]	276[b]	287	306	310	331	357	361[b]	361[b]	361[b]	361[b]
Total	5 226	5 401	6 070	6 394	6 465	6 703	6 623	6 772	6 886	7 162

a) NSI estimates based on local administration budgets, excluding energy and vehicle taxes, which are included above.
b) Rough estimates in order to be able to estimate a total.
Source: INA (Belgostat), calculations NSI; OECD database on environmentally related taxes.

3.2 *Transport taxes*

Since 2002, vehicle taxation (registration tax, annual motor vehicle tax, Eurovignette) has been the responsibility of the regions, though the federal government continues to collect the taxes (Chapter 2). The *registration tax* is based on engine capacity in horse power (HP), on power in kW, on vehicle age, and/or on the amount of pollutant emissions. The *annual motor vehicle tax* is based on engine capacity in HP. A supplementary annual motor vehicle tax has been introduced for liquified petroleum gas (LPG) vehicles, taking account of i) the absence of excise duties on LPG and ii) the reduced registration tax on LPG vehicles. The charge for the delivery of licence plates (at purchase) was replaced in 2005 by an increase of excise taxes. Also, an *excise compensation tax for diesel vehicles*, based on engine capacity in HP, was introduced to compensate (to some extent) for the lower excise duties on diesel fuel, though it is scheduled to be phased out. Such (limited) shift from vehicle taxation to road fuel taxation (and implicitly to taxation based on kilometres driven) is welcome, as road fuel taxation is more targeted on the external effects of driving rather than on ownership. In Flanders, a guide to CO_2-friendly cars was launched in January 2006 and work is under way on a vehicle eco-score system (and related taxation), which would take account of a range air pollutant emissions (including but not only CO_2). The "*solidarity contribution fee*", which is of federal responsibility and applies to the private use of company cars, has been made dependent on CO_2 emissions.[4]

Wallonia plans to extend *motorway use charges* to all users, including foreign vehicles.[5] A quarter of the proceeds would accrue to the transport sector in the region.

A number of *fiscal measures to reduce energy consumption* in the different sectors have been or are being implemented. They encompass the fiscal deductions for commuting to work with clean transport, the fiscal deductibility for the purchase of clean vehicles, a reduction of excise duties to promote bio fuels, an increase in excise duties for normal fuels, and fiscal incentives for energy efficiency investments in the residential sector.

However, Belgium still has *fiscal incentives that work against environmental concerns* and that should be removed, such as incentives for the use of company cars and sport utility vehicles. Current tax breaks (companies can deduct 75% of the costs of the cars as a business expense) have led to a high share of company cars in the total vehicle stock (one-third) and an inefficient vehicle stock because companies tend to purchase cars with larger engines. Sport utility vehicles are considered to be commercial vehicles and owners do not pay VAT.

3.3 *Greening fiscal measures*

The 1998 OECD environmental performance review recommended that Belgium place greater emphasis on the *greening of fiscal measures*, i.e. modifying them so as to reduce pressure on the environment without increasing the total tax burden. A thorough and systematic examination of tax provisions that increase pressure on the environment has not yet been carried out. Nor has a green fiscal reform been achieved. Action 22 of the Federal Plan for Sustainable Development 2004-08 aims at developing a strategy "to guarantee the right price" and mentions three possibilities: i) progressively abolishing existing advantages (tax exemptions and deductions) for products and activities that pollute the environment and are not consistent with sustainable development; ii) introducing incentives for environmentally-friendly products and activities and advising against polluting products and activities; and iii) shifting the tax burden from labour to natural resources, as well as creating a double dividend (environment/employment).

3.4 *Agricultural subsidies*

Since 2002, *agricultural policy implementation* has been totally delegated to the regions (Lambertmont Agreement), but this has had no significant influence on Belgium's support for the agricultural sector as the largest part of its financial assistance is stipulated at the European level, as part of the Common Agricultural Policy (CAP).

In *Flanders*, payments for arable land and beef are decoupled from production, while it is estimated that about 25% of payments will be coupled to production. Total payments to farmers amount to EUR 180 million/year.[6] In 2005, Flanders introduced the new "single farm payments" scheme developed under the CAP reform, which includes requirements to respect environmental, food safety and animal welfare standards and to keep farmland in good agricultural and environmental condition ("cross-compliance"). *Wallonia* will also implement the new principles of cross-compliance and decoupling of the subsidies introduced by the 2005 CAP reform, which apply to some 760 000 ha of agricultural land, or half its territory.

Rural development programmes

Up to 2003, three programmes were implemented in Belgium: one at the federal level, one for Flanders and one for Wallonia. The *federal* horizontal rural development programme aimed to facilitate the development of agricultural areas with an emphasis on increased use of environmentally-friendly production methods and preservation of both the countryside and biodiversity. The programme encouraged organic farming and established demonstration projects and aid schemes for business management. Planned public expenditure over the period 2000-06 was EUR 156 million, including an EU contribution of EUR 72 million. The federal rural development programme ended in 2003 following the Lambermont Agreement. The measures have since been included in the regions' rural development programmes.

For the period 2000-06, funding of *Flanders' and Wallonia's rural development programmes* amounted to EUR 537 million and EUR 275 million, respectively; this included a contribution of EUR 214 million and EUR 104 million, respectively, from the European Agricultural Guidance and Guarantee Fund (EAGGF) Guarantee section. In 2004, agri-environmental measures accounted for 23% of Flanders' expenditure on rural development programmes and 45% of Wallonia's expenditure. Between 2000 and 2004, EU financing of Belgium's agri-environmental measures increased from EUR 5.2 million to EUR 13.5 million (OECD, 2005a). In 2004, total agri-environmental payments in Belgium, including the national contribution, amounted to EUR 26 million.

Flanders

Agri-environmental measures in Flanders are currently estimated to cover about 60 000 ha, or *10% of the Flemish farmland*. These measures address: soil cover (applies to 43% of the farmland benefiting from agri-environmental measures); mechanical weeding; reduction of fertilisers and pesticides in ornamental plant cultivation; conservation of local species threatened by extinction; management of meadow birds; management of field edges; restoring, planting and maintaining of small landscape elements; botanical management; reduced use of fertilisers to protect vulnerable waters (applies to 33% of the farmland covered); conversion of traditional to organic pig farms; organic farming; and integrated fruit production. EUR 16 million was spent on these measures in 2003.[7] An independent evaluation carried out that year in the framework of the EU common monitoring and evaluation approach showed it was too early to measure results and impacts but stressed the importance of an *integrated monitoring and evaluation framework*.

Since 1994, organic farmers can receive hectare support for five years. New measures were adopted in 2001 to *stimulate organic farming*; these led in 2003 to the "Action Plan for Organic Farming II", increasing the hectare support, making it

permanent, and granting extra support to the information centre of the organic farming sector. The total area of organic farming in Flanders increased from about 1 000 to 4 000 ha between 1998 and 2001; it stabilised in 2002, then decreased in 2003 and 2004 to 3 219 ha. This includes just 231 organic farms and represents *only 0.5% of Flanders' total agricultural area*. The decline was mainly caused by a reduction of the area devoted to organic pasture and organic vegetable cultivation.[8]

Wallonia

Agri-environmental measures covered *6% of the Walloon farmland* in 2004. Farmer participation increased up to 2003 (to about 14 000 contracts), with a marked growth in 1999 due to: i) the increased financial attractiveness of some measures (e.g. for hedges); ii) increased access to agri-environmental measures; and iii) effective promotion of the measures by the implementing agency. The decrease in 2004 (to about 12 000 contracts) was linked to the end of the many five-year contracts made in 1999 and to anticipation of new agri-environmental measures in 2005. In 2004, one farmer out of three had at least one agri-environmental contract. Favourite measures concerned planting of herbaceous strips along field edges (50% of the contracts), maintenance of hedges and tree alignments, and planting of a winter soil cover before a spring crop. An evaluation of the programme concluded that its impact was generally positive but could be improved to better target environmental priorities and to ensure regularity in premium payments. A *revised programme of agri-environmental measures* was therefore launched in early 2005.

The number of *organic farms* and areas cultivated for organic farming increased between 1996 and 1999, but the growth then slowed due to strengthened specifications for animal production and difficulty in getting a better market value for organic meat and milk in large department stores. Since 2004, however, conversion of traditional farms to organic farms has again started to increase in response to *a new assistance scheme*. The new scheme, open to all producers, introduces the principle of declining aid with increasing farm area, which favours smaller farms. At the end of 2004, organic farming covered *20 000 ha or 2.7% of Wallonia's total agricultural area* (compared to an objective of 4% set by the Contract for the Future for Wallonia and the Federal Plan for Sustainable Development 2000-04). The number of organic farms was about 480 (Cellule État de l'Environnement Wallon, 2005).

Economic analysis of environmental regulations

Regulatory impact assessments were introduced in Flanders in 2005 to evaluate the impact of new regulations. Such assessments provide a rough estimate of expected costs and benefits of different policy options. Also, to analyse the most cost-effective way to reach environmental objectives, policy measures are subject to an environmental costing model called MKM. The MKM has been used in air quality management, for example, to determine how best to implement the National Emission Ceilings Directive. Economic studies are ongoing or planned for odour emissions, the second climate plan, implementation of the EU Water Framework Directive, policy related to forests and parks, and environmental subsidies.

Green procurement

For several years, multiple initiatives have been taken by the different authorities (federal, regional, local) to gradually include "green criteria" in the public calls for tender. *New legislation has been* adopted and information campaigns have been organised to enhance the greening of public procurement.

6.4 Economic instruments

Belgium relies on economic instruments in many environmental fields at regional level (Tables 4.11, 4.12, 4.13) and at federal level, and there is a *slow trend towards their wider use*. The purpose of most environmental charges and taxes is to change behaviour and finance mitigating action (e.g. in line with the polluter pays and user pays principles).

Table 4.11 **Environmental charges, Flanders**

Charge	Unit	Charge rate[a] (EUR/unit)	Collected amount[b] (EUR million)	Use of revenues[c]
GENERAL				
Environmental permit charge[d]			0.5	MINA Fund
Category I firms subject to EIA	permit	247.89		
Other category I firms	permit	123.95		
Category II firms	permit	61.97		
WATER				
User charge (waste water treatment)[e]				
Drinking water			118	Water company
Sewerage	m^3	max. 1.0197[f]		
Sewage treatment	m^3	0.6798[f]		
Non-drinking water	pollution unit	min. 29[f]		Water sanitation company
Pollution charge	pollution unit[g]	28.61[f]	137	MINA Fund
Groundwater abstraction charge			11.5	MINA Fund
Drinking water companies	m^3	0.0814[f]		
Others				
Less than 500 m^3/year	m^3	Free		
500 to 30 000 m^3/year and non-artesian water	m^3	0.0543[f]		
More than 30 000 m^3/year and artesian water				
30 000 to 100 000 m^3/year	m^3	min. 0.0697[f, h]		
100 000 to 1 million m^3/year	m^3	0.075 to 0.150[f, h]		
More than 1 million m^3/year	m^3	0.147 to 0.297[f, h]		
Surface water abstraction charge			16	WenZ
Less than 500 m^3/year	m^3	Free		
500 to 1 million m^3/year	m^3	0.043381		
1 to 10 million m^3/year	m^3	0.025161		
10 to 100 million m^3/year	m^3	0.012643		
More than 100 million m^3/year	m^3	0.002380		
Gravel extraction charge			2.3	Gravel Fund
Valley	m^3	0.56		
Mountain	m^3	0.39		
WASTE[i]				
User charge (waste collection and disposal)			. .	Municipalities
Residual and organic waste	bag (60 litres)[j]	1.14[k]		
Packaging waste[l]	bag	0.125 or 0.25[m]		
Flat charge	family/year	59.55 or 82.95[n]		
Disposal tax			38	MINA Fund
Landfilling	tonne	0.32 to 123.63[o]		
Incineration	tonne	6.8 to 61.82[o]		
Co-incineration	tonne	3.75 to 4.99		

Manure charge[p]			10	MINA Fund
Basic charge on manure production	kg N and P	0.0111		
Basic charge on fertiliser use	kg N and P	0.0223		
Fine on incorrect application or disposal	Kg N and P	1.00		
Surcharge on excess[q] or fine[r]	kg N and P	0.99		
Import tariff	tonne	2.4789		
Soil attestation charge[s]	parcel	25	4.4	OVAM
NATURE CONSERVATION				
Hunting license	person/year	40 to 150[t]	2	Agency for Nature and Forests
Fishing license	person/year	75	0.8	Agency for Nature and Forests
Contribution for forest conservation[u]			2.5	Agency for Nature and Forests
Indigenous hardwood	m^2	3.96		
Mixed forest	m^2	2.97		
Non-indigenous hardwood	m^2	1.98		

a) Rates as of 1 January 2005, unless otherwise indicated.
b) In 2005.
c) MINA Fund: Environment and Nature Fund (revenues contribute to the financing of Flemish environmental policy); Wenz (Waterwegen en zeekanaal): public body in charge of the Flanders inland navigable waterways and sea-canal (from Brussels to the Scheldt); OVAM: Public Waste Agency of Flanders.
d) Industrial activities are regrouped in three categories according to their likely impact on the environment (Category I: strong; Category II: harmful; Category III: limited).
e) User charges for waste water treatment were established in 2005.
f) Rates as of 1 January 2006.
g) For households, proportional to water consumption. For industry, based on measured concentration or conversion coefficients for organic matter and suspended solids, heavy metals, nutrients (N and P) and cooling water.
h) The rate increases with water scarcity of the aquifer.
i) Product charges (so-called "ecotaxes") and pesticide tax are under federal authority.
j) Some municipalities use containers with charge based on volume or weight.
k) On average (each municipality sets its own rate). Rate in 2003.
l) Plastic bottles, metals, drinking cardboard.
m) The rate varies according to municipalities.
n) Depending on whether the charge is specific to waste (EUR 59.55) or if it covers broader environmental management (EUR 82.95).
o) The rate varies according to the type of waste.
p) Levied on farmers.
q) Above the allowed amount.
r) For non-compliance with processing or export requirements.
s) Established in 1996, the charge applies to land cessions. The aim is to follow up on ownership of contaminated soils.
t) The rate varies according to the type of license (normal, Sunday-only, five-day).
u) Charge per m^2 of deforested area in case of non-fulfilment of reforestation obligations.
Source: Flemish authorities.

Table 4.12 **Environmental charges, Wallonia**

Charge	Unit	Charge rate[a] (EUR/unit)	Collected amount[b] (EUR million)	Use of revenues[c]
TERWA				
User charge (sewage treatment)			38.4	Water company
Households	m^3 water consumption	0.5542[d]		
Agriculture (domestic sewage)	m^3 water consumption	0.3966[e]		
Pollution charge			10	WPF
Industry	pollution unit[f]	8.9242		
Agriculture (livestock effluents)	pollution unit[f]	8.9242		
Groundwater abstraction charge			3.6	WPF
Less than 3 000 m^3/year	m^3	Free		
3 000 to 20 000 m^3/year	m^3	0.0248		
20 000 to 100 000 m^3/year	m^3	0.0496		
More than 100 000 m^3/year	m^3	0.0744		
Potable water abstraction charge	m^3	0.0744	0.5	WPF
WASTE[g]				
User charge (waste collection and disposal)	Bag[h]	..[i]	..	Waste company

a) Rates as of 1 January 2005, unless otherwise indicated.
b) In 2005.
c) WPF: Water Protection Fund.
d) Since 2005, free for households connected to public water supply.
e) In the absence of metering: 100 m^3 per year per household plus water consumption by livestock (estimated at 1.8 m^3 per pollution unit).
f) Based on measured concentration or conversion coefficients for organic matter and suspended solids, heavy metals, nutrients (N and P) and cooling water. There are coefficients to convert livestock units into pollution units equivalent.
g) Product charges (so-called "ecotaxes") and pesticide tax are under federal authority.
h) 70% of municipalities charge per bag. Some municipalities use containers with a flat rate charge plus charge based on volume or weight.
i) The rate varies according to municipalities.
Source: Walloon authorities.

Air

Belgium has no economic instruments to directly address *traditional air pollution* but instead applies sanctions when air emissions surpass permitted levels. The efficiency of this approach should be compared with the use of economic instruments such as emission charges or emission trading. With standards, all firms must comply equally while their costs per unit of emission reduction vary. In contrast, emission trading (where feasible) assures that the environmental target will be met, and pollution abatement takes place where most efficient. Emission charges can both

generate revenues commensurate with the external costs imposed by the emissions and provide incentives for reducing emissions, provided the rates are appropriate.

The EU *Emission Trading Scheme* addresses *greenhouse gases* and is well in place in Belgium. It will bring multiple benefits not only in terms of reducing greenhouse gases but also in reducing traditional air pollutants and providing energy savings. A *green certificate market* was adopted in Belgium to provide "green" electricity.

Water charges

Water charges are a main source of revenue for the regions, after transportation taxes. They consist of pollution charges, user charges and abstraction charges. In Flanders, until recently households and industry were subject to *pollution charges* at the same rate per pollution unit. Over the review period (until 2004), the rate was not increased in real terms but adjusted for inflation only. In volume, charges paid by industry have decreased annually, reflecting efforts made by firms to reduce their waste water discharges, whereas charges paid by households have remained virtually unchanged, reflecting stability in water consumption (as for households, pollution charges are proportional to water consumption).

Table 4.13 **Environmental charges, Brussels-Capital**

Charge	Unit	Charge rate[a] (EUR/unit)	Collected amount[b] (EUR million)	Use of revenues
WATER				
User charge (sewage treatment)	m^3	0.3471	..	Water company
Pollution charge	pollution unit[c]	..	21 (2002)	Water Fund
WASTE[d]				
User charge (waste collection and disposal)		Free[e]		

a) Rates as of 1 January 2005, unless otherwise indicated.
b) In 2005, unless otherwise indicated.
c) Based on a fixed pollution load for households. For industry, measured concentration or conversion coefficients for organic matter and suspended solids, heavy metals and nutrients (N and P).
d) Product charges (so-called "ecotaxes") and pesticide tax are under federal authority.
e) Municipal waste management is financed by the (broad) regional tax levied on households.
Source: Authorities from the Brussels-Capital Region.

Since 1 January 2005, water companies have been made responsible for sanitation of the drinking water they supply, and users of tap water (households, industry and agriculture) have been charged a combined water bill (public water supply and waste water treatment) to raise awareness about water prices. *User charges for waste water treatment* consist of a municipal charge for sewage collection (sewerage) and a supplement for sewage treatment. For households, the supplement replaces the pollution charge, except in the case of groundwater extraction. For industry and agriculture, the supplement is deducted from the pollution charge. In the case of non-drinking water, Flemish industries that discharge into municipal sewers are subject to user charges for waste water treatment that can also be deducted from pollution charges. Industries that discharge directly into water bodies continue to pay pollution charges only. User charges (for waste water treatment) and pollution charges should not be mutually exclusive. The latter apply the polluter pays principle while the former aim at cost recovery of sewage treatment services. User charges for waste water treatment have been set at higher rates in Flanders than in Wallonia, and rates in Brussels-Capital are the lowest.

Up to 2002, the rates for groundwater extraction in Flanders were too low to provide an incentive for reducing water use or substituting surface water for ground water (in some cases, the rates were significantly lower than those for the withdrawal of surface water). Groundwater *abstraction charge* rates have since been increased, and conservation pricing (increasing-block schedule) has been applied to withdrawals above 30 000 m^3/year or from artesian water. For these withdrawals, the charge is intended to aim at rent recovery and thus varies according to water scarcity (location of the aquifer, water table level). Reductions to the groundwater charge allocated to some sectors were abolished in 2002, and since 2005 charge rates have been increased by 50 to 100% (depending on water scarcity) for the two aquifers of Landiaan and Sokkel. A *gravel extraction charge* also applies in Flanders. The aim is to protect habitats (gravel banks/gravel islands) and wetlands (threatened by the lowering of the river and the associated groundwater level).

Waste related charges and taxes

Charges on waste are also a main source of income for the regions, though after water charges. These consist of *user charges*, *product charges* and, in the Flanders Region, *manure charges* (Box 4.6). Fiscal measures also apply to waste management, in the form of a *disposal tax (landfill, incineration, co-incineration)* and *pesticide tax*. These instruments have been environmentally effective overall, but their design could often be improved to also achieve economic efficiency.

In Flanders, for instance, most municipalities apply *user charges* (for waste collection and disposal) based on volume or weight (through the use of plastic bags or

containers). In some municipalities, a flat charge is still levied on each family (specific to waste management or with a broader environmental coverage). Even if they facilitate cost recovery, such flat charges do not create incentives to minimise waste. Instead, user charges should be set at rates that allow cost recovery. Municipalities sell blue bags for small packaging waste (plastic bottles, metals, cardboard beverage boxes) at a much cheaper rate than the bags used for unsorted household waste, to encourage separate collection. For collection and disposal of bulky waste, municipalities charge per volume or per piece of waste. The collection and/or bringing of paper, cardboard, glass, waste electrical and electronic equipment (WEEE) and small hazardous household waste is free. Municipalities have started to charge for access to bring centres (bulky, garden or demolition waste), at a flat rate or per volume or weight.

Implemented since 1996 at the federal level, *product charges* (so-called "ecotaxes") initially applied to batteries, beverage containers, disposable razors (introduced but subsequently withdrawn) and disposable cameras, as well as to packaging of certain industrial goods (e.g. inks, glues, solvents, pesticides), magazine papers and newspapers, and pesticides.[18] As the system became unduly complicated, a number of charges (e.g. on beverage cans) were redesigned along simpler lines. A uniform charge was introduced on all drink containers that cannot be re-used or do not consist of a high percentage of recycled material. High charge rates have led to a substantial decline in the use of these products (in the case of disposable razors, sales fell to zero). An *exemption from the charge* is allowed if a certain recycling rate is met.[19] This charge-exempt recycling target has been made more stringent with time: for beverage containers, from 20% in 1996 to 70% in 2000; for batteries, from 60% in 2002 to 65% in 2005; for packaging of industrial products, from 40% in 1996 to 85% in 2005. The required recycling rate for disposable cameras is 80%. Since 2004, all non-reusable beverage containers have been subject to the charge. There was an attempt to increase the charge on beverage containers at the beginning of 2005, but it was cancelled six months later, as it reportedly had the undesired side effect of increasing cross-border shopping.

The product charges generate revenues to the federal government (EUR 0.8 million in 2003), which are lower than the costs of collecting them. Since their purpose is to induce reuse or recycling, the charges should be evaluated by reviewing the resulting *environmental benefits*, the costs incurred in setting up and running the schemes, and any changes in *consumer surplus* from induced changes in consumption patterns. The scheme, which initially aimed at reorienting consumption away from packaging-intensive products and reducing the generation of packaging waste, was transformed into an instrument to promote recycling. Whereas Belgium

has sharply increased recycling rates, these achievements seem to have come at significant cost to society. Indeed, the setting of recycling targets should be based on economic analysis. One study suggests the optimal recycling rate is between 45 and 70% (OECD, 2003a).

The *pesticide ecotax* has never been implemented for agriculture. In 1996 the number of pesticide tax rates was reduced from three to two (EUR 0.05 and EUR 0.25/g of active ingredient), with the higher rate applying to the most toxic substances (diuron, atropine, isoproturon, pentachlorophenol, simazine). Since 1998, however, a *federal pesticide tax* has applied to pesticides bought for agricultural use. The tax applies to the same five active substances as the pesticide ecotax, but its main purpose is to finance the registration of active ingredients pursuant to the Plant Protection Products Directive (91/414/EC) and the federal programme to reduce agricultural pesticides and biocides. Revenues (EUR 250 000 per year) accrue to the fund for raw materials and products. Marketing authorisation holders pay the tax on the basis of several criteria (health and environmental effects, flammability). The extremely low rate planned in 1998 (EUR 0.0025/g of active ingredient) had insured wide acceptance from the farming sector, since farmers were better off than with an extension of the higher ecotax for agricultural use (Ecotec, 2001). The rate has since been increased (up to EUR 0.395/kg or litre of pesticide) to create incentives for industry to produce safer products and for consumers to buy them (the amount of the tax appears on the invoice). However, the rate is still too low (and is not expected) to have a significant effect on pesticide sales.

Forest payments

Since 1991, private forest owners in Flanders have been entitled to a *forest plantation payment* for afforestation or reforestation, based on acreage and with higher rates for indigenous trees. Financial incentives are also provided for opening private forests to the public and for preparing large-scale forest management plans (i.e. together with adjacent properties). It would be better if such payments were based on the provision of environmental services (e.g. improvement of water quality, creation of biodiversity corridors). Since 1999, any deforestation must be licensed and compensated either by planting trees on a surface that was not previously forested of at least the same size or by making a *compensation payment* to the forest administration (for the buying and afforestation of land). This measure provides for maintaining the forest cover but does not prevent the conversion of old growth forests (of high biodiversity value) into young plantations (with higher carbon sequestration). As for plantation payments, compensation payments should reflect environmental externalities.

In *Wallonia*, forest plantation (and management) payments are conditional upon compliance with good forest practices (e.g. species suited to the plantation site, mixed plantation forests, absence of drainage, early thinning). Both private and public forest owners are eligible. Since September 2006, participation in a forest certification scheme has been added to the eligibility criteria for conifer planting (from 1 January 2008 it will also apply to broadleaf regeneration).

Land cessions

In Flanders, a soil investigation must be carried out before any land on which an activity with high potential for soil contamination is or has been carried out can be transferred. If there is evidence of contamination, the transfer cannot take place until i) a remediation plan is worked out, ii) the buyer or seller (the party) commits itself to undertake the remediation work after the transfer, and iii) the Public Waste Agency of Flanders (OVAM) is provided with enough financial guarantee to cover the remediation cost. In case of non-compliance, the OVAM can substitute itself to the defaulting party and use the financial guarantee to carry out the remediation. This mechanism has proved very effective in triggering the *clean-up of contaminated soils* while integrating remediation costs in the price of land.

More generally, any land cession requires a "*soil attestation*" from the OVAM. It provides the buyer with a summary of all information available in the register of contaminated land. Revenues of the soil attestation charge (EUR 25) cover the operation of the scheme.

6.5 Role of the private sector

Environmental certification

There has been a *large increase in environmental certification* of Belgian industries in recent years. By the end of 2003, more than 300 Belgian enterprises were ISO 14001 certified (two-thirds of them since 2000). In March 2005, 33 organisations and 179 sites were registered with EMAS (the Eco-Management and Audit Scheme of the EU).[20] In the *Brussels-Capital Region*, environmental authorities have certified 98 companies that develop internal environmental plans that help them to comply with regulation. This certification scheme, the "eco-dynamic enterprise" label, has drawn interest from some other European countries.

Agreements with industry

The SO_2 and NO_x emission reduction objectives set by the 1991 *sector agreement between Belgian electric power plants and the three regional authorities* (to reduce SO_x levels by at least 80% compared to 1980 levels, and NO_x levels by at least 40%) were met by the end of 2003: SO_2 emissions were 90% lower than their 1980 level, and NO_x emissions were 60% lower. Electricity companies also met their commitment not to use coal with sulphur content above 1%. The 1998 federal Law on Product Standards allows for sectoral agreements between federal authorities and industry; however, no such agreements have been signed at the federal level. In *Flanders*, 12 agreements have been signed since 1998 between Flemish authorities and industry. Two relate to soil clean-up, one to NO_x emissions from electricity production, and nine to waste management. Nearly all producer responsibility concerning waste is being implemented through such agreements which have a basis in Flemish legislation. In *Wallonia*, 12 agreements were signed (in 2003 and 2004 alone) with firms in the chemical industry, cement production, paper industry, food production and other fields. Two types of environmental conventions exist in Wallonia: industrial sector agreements and waste reduction and recycling obligations. In the Brussels-Capital Region, one agreement was signed with industry in recent years.

Regional authorities in both Flanders and Wallonia have signed agreements with industry on *energy efficiency* as part of their climate change policy (Box 4.2). In Flanders, by late 2004, about 180 companies had signed benchmarking agreements applying to large energy-intensive companies or companies falling under the EU

Emission Trading System. There is also an audit covenant applying to 229 medium-sized companies. In Wallonia, agreements are signed by sector, and commit the sector to a quantified energy efficiency improvement over the period 2000-12. Agreements signed cover 117 energy intensive firms and more than 90% of the region's industrial energy consumption.

In the three regions, producer responsibility has applied to packaging waste since 1995, and is implemented through agreements. *Extended producer responsibility* (EPR) has been established for a number of waste streams in recent years (e.g. photo-processing chemicals, organic agricultural waste, waste oil, waste fat and oil from baking) in addition to waste streams already covered (e.g. pharmaceutical waste, paper, old tyres, batteries, and waste electrical and electronic equipment). There is also a take-back obligation for end-of-life vehicles, accumulators and agricultural plastic waste. An in-depth evaluation of the effectiveness and efficiency of producer responsibility schemes is under way. Under the scheme, producers and importers must fulfil a recycling/recovery target through a take-back programme operated either directly by themselves or by a sub-contractor. Placing responsibility for waste management with producers creates a strong incentive for them to redesign products with less material input and improved recyclability. However, if individual producers become responsible for collection, sorting, and recovery or disposal of their own products, there will be a tendency towards a fragmented waste management system, losing the benefits of economies of scale and synergies between different treatment options enjoyed by integrated systems. To increase environmental effectiveness and economic efficiency, EPR schemes should involve product charges, designed both to minimise at source the production of environmentally harmful products and to finance safe disposal, recycling or reuse.

Economic instruments are sometimes used in conjunction with agreements with industry. An example is an agreement signed between the three regional environmental authorities and petrol stations to finance the *clean-up of contaminated soils* affected by leakages. A special fund (called BOFAS Fund) for remediation of soil and groundwater is financed by the petrol station owners (50%) and by a small charge on fuel (50%). The charge was established in 2004 at 0.30 eurocent per litre of petrol and 0.20 eurocent per litre of diesel. The fund contributes to clean-up operations up to a limit: EUR 37 200 if either soil or groundwater needs remediation, and EUR 62 000 if both soil and groundwater need remediation. Similar financing models are being considered to clean up pollution from storage tanks for fuel oil, and from dry-cleaning facilities. In 2006, Flanders decided that specific funds could be created to help small and medium-sized enterprises carry out the clean-up of contaminated soils. While looking for possible sources of financing, funding will be from the general Flemish budget.

Overall, Belgian federal authorities, regional authorities and industry look quite favourably upon *partnerships and agreements with industry* as a flexible and effective way to reach targets. The nature and scope of the agreements vary, depending on environmental issues and regions. Many studies have shown that voluntary approaches, to be effective, must be accompanied by monitoring mechanisms to assure accountability and facilitate evaluation. Voluntary measures are an important component of the instrument mix, but should not automatically be chosen over regulations or economic instruments when these would be more cost-effective.

Product labelling

The *federal government* is active in promoting (and awarding) the EU eco-label,[21] the Flower, within Belgium. The EU eco-label has a clear objective of encouraging business to market "greener" products. The number of eco-labelled products on the Belgian market increased from 31 in 2003 to 76 in 2006. The consumption of organic food products is increasing (from EUR 62 million in 1997 to EUR 315 million in 2004).

1. Environment and Employment

A key challenge for Belgium is to reduce *unemployment* (Figure 5.1). The environmental sector is modestly but steadily contributing to this goal.

Environment-related jobs

The 1998 OECD Environmental Performance Review of Belgium indicated that the country had approximately 50 000 *environment-related jobs* and that the field of environmental protection offered many job creation opportunities. Recent data show the number of jobs in the environmental field has increased by 10%.

In *Wallonia*, a recent study that reviewed *environment-related jobs in the region* (ICEDD-ASBL, 2004) estimated their number at nearly 23 000 in 2005, or 1.6% of the working population (Table 5.2). The private sector accounts for almost 47% of the jobs, the public sector for 45%, and non-profit organisations for 8%. The jobs are equally divided between *resource management and pollution management*, and waste and water management are the main job areas.

In the *Brussels-Capital Region* the number of environmental jobs is estimated to range between 4 500 and 8 400 (i.e. between 0.7% and 1.3% of total employment). A recent study of the *impact that a more sustainable construction orientation would have on employment* (i.e. by minimising the negative environmental impacts of

construction, and improving the energy performance of buildings) estimated that at least 2 450 jobs could be created by 2010 (a 3.6% increase in the construction sector) (RDC-Environment, 2004).

In *Flanders*, there is no recent estimate of employment in eco-industries and environmental services. An estimate for 1997 gives a total number of jobs in the environmental sector (including government jobs) at about 25 500 (SERV, 2000).

Net effect of environmental policies on employment

One practical example of recent efforts in Belgium is the work done in "*re-use centers*", where used household appliances are collected, repaired if necessary and sold. This extends the life of such goods, makes them available at an affordable price, and generates employment for people who would otherwise have a hard time finding a job in the current economy.

Available evidence suggests that Belgium's environmental policies have had a *neutral macro net effect on employment* (job creation minus job elimination). This is consistent with findings in other countries. A study is currently underway to develop a model for Flanders to estimate the effects of environmental policy measures on employment. Additional studies of the interface between environmental policies and employment would be welcome.

3. International Trade and the Environment

With its very open economy, Belgium seeks to avoid obstacles to international trade and favours multilateral environmental agreements (MEAs) rather than unilateral measures to protect the environment. In the area of chemicals, for example, Belgium has supported adoption of uniform rules in the framework of the OECD and the EU.

Concerning enforcement of specific MEAs, under the terms of a 2002 circular of the College of General Attorneys to the Appeals Court, the *federal police* are in charge of controlling large-scale traffic in the areas of waste, nuclear energy and protected fauna and flora. The National Safety Plan 2004-07, which addresses environmental crime, gives highest priority to controlling waste traffic. To create synergies between the various parts of the police force, a structured network of information exchange was created, involving 532 members from district legal services, police forces in charge of road, rail and inland water traffic control, and local police. Such an integrated approach, however, does not apply to trade in endangered species, which is given lower priority and where action is taken (by the federal or local police)[13] only upon complaint or denunciation. In 2004 the federal government asked the College of General Attorneys for advice on the usefulness of creating a federal commission on prosecution of environmental infringements.

3.1 Ozone-depleting substances

Belgium has ratified all amendments to the 1987 Montreal Protocol. It is also committed to following the EU timetable for total elimination of ozone-depleting substances (ODS), which is more stringent than the protocol (Table 7.5). The use and emission of ODS as refrigerants and disinfectants has decreased sharply since 1998, and Belgium barely relies on carbon tetrachloride and methyl chloroform as solvents. However, although efforts have been made to reduce reliance on ODS, Belgium *still imports CFCs* for uses other than those agreed as essential by parties to the protocol.[14] This is especially the case for CFC-11 and CFC-12. In Flanders the Environmental policy Plan 2003-07 (MINA 3) set a target to reduce ODS emissions by at least 70% by 2007 as compared to 1999; the target is expected to be met.[15]

Belgium produces no ODS other than *HCFCs*, and its HCFC import quotas are established at EU level. Belgium's use of HCFCs to replace CFCs in cooling equipment decreased by 89% (in ozone-depleting potential equivalent) between 1998 and 2004, in an effort to meet the 2010 EU phase-out target. As of 1 September 2006, the use of *methyl bromide* was totally phased out, except for quarantine and pre-shipment (QPS) and on the condition that at least 80% be captured, reused or destroyed under safe and controlled conditions. ODS are being replaced, in part, by *fluorinated gases* (HFC, PFC, SF_6), which contribute to global warming and therefore fall under Belgium's climate change policy (Table 7.2). The 1997 Montreal Amendment, which Belgium ratified in 2004, bans the export of used, recycled or reclaimed ODS except those to be destroyed.

3.2 Persistent organic pollutants

In 2002 Belgium ratified the 1998 *Rotterdam Convention on "prior informed consent"* (PIC), whose objective is to regulate the imports of 22 pesticides and 5 dangerous chemical substances that are widely prohibited or strictly controlled, including 7 of the 12 persistent organic pollutants (POPs) covered under the Stockholm Convention. The (voluntary) PIC procedure is a means of officially knowing the decisions of individual countries about whether or not to accept imports of the listed pesticides and chemical substances in the future. *Most obligations imposed by the 2001 Stockholm Convention have already been transposed* in Belgian (and EU) legislation and are now mostly relevant to developing countries (Box 7.3).

Belgium is also a party to the *Aarhus POPs Protocol to the LRTAP Convention*, which came into effect in October 2003 and which prohibits the production and use of eight pesticides covered by the Stockholm Convention plus chlordecone and lindane. The Aarhus POPs Protocol severely restricts the use of DDT, HCH (including lindane) and PCBs and provides for the phase-out of DDT and PCBs by 2010. Emissions of unintentional by-products (dioxins, furans, hexabromobiphenyl and PAHs) must be reduced to their emissions level in 1990 (or in a year between 1985 and 1995). The regional governments are responsible for implementing measures to achieve these reductions. The 13 other substances are "old" pesticides, whose production and use has long been prohibited in Belgium. Three products remain of concern, however: PCBs, lindane (still used in veterinary medicine) and hexabromobiphenyls (about which little information on current use is currently available). Air and water emissions of dioxins, lindane, DDT, hexachlorobenzene and PAHs are subject to reduction commitments under the *North Sea Conference* (Figure 7.2) and under EU legislation.

In Belgium, the federal government is responsible for pesticide registration. At the regional level, programmes to reduce pesticide use have existed for years. However, it was not until 2005, pursuant to the 1998 law on product standards, that a *federal programme to reduce use of agricultural pesticides and biocides* was adopted. A key objective is to reduce the negative impacts of pesticide use in the agricultural sector by 25%, over the period 2001-10. A first assessment is due by the end of 2006.

3.3 Hazardous waste

Belgium implements the *1993 EU Council Regulation on the supervision and control of shipments of waste* ("shipment regulation") within, into and out of the European Union.[16] In particular, under the regulation's Annex II, Belgium has introduced a "green list" of waste allowed to move, subject only to controls normally applied in commercial transactions. Annexes III and IV (amber and red lists) regulate wastes not included in the Basel Convention but whose movement is subject to control. Annex V covers wastes whose export for recovery to non OECD countries is prohibited. All wastes not included in the five annexes are to be controlled, as well as all wastes destined for final disposal. Belgium ratified the 1995 Geneva Amendment to the 1989 Basel Convention in 2003, dealing with the ban of exports to non OECD countries. The ban, which Belgium already implements as part of the EU shipment regulation, applies to exports to non OECD countries of hazardous waste destined both for final disposal and for recovery or recycling.

Although Belgium's reporting to the Basel Convention refers only to trade of hazardous waste within the EU area, increasing quantities of electrical and electronic equipment waste[17] (WEEE) are being shipped from the port of Antwerp to China.

Inspections of transfrontier movements of wastes by the Flemish Environmental Inspectorate confirm that shipments of plastic scrap and waste to Asia have increased since 2003. Also, well-known hazardous waste streams to Africa, like end-of-life-vehicles and WEEE, persist. There is no indication that considerable volumes of hazardous waste are being exported for sheer dumping purposes. Some waste streams are exported to developing countries for recycling,[18] although it is likely that a portion of these shipments is not-recyclable and is therefore dumped or incinerated at the place of destination, such as end-of-life-ships containing asbestos, polluted scrap containing shredder residue ("fluff"), and waste plastics containing organic debris. All efforts should be made to prevent and cease such shipments of non-recyclable hazardous waste.

Generation of hazardous waste in Belgium significantly increased over the review period in both Flanders and Wallonia (UNEP, 2004). Most trade of hazardous waste in Belgium occurs in *Flanders* (Table 7.6). Having adequate treatment facilities, Flanders imports sizable quantities of hazardous waste. More than 60% of the imports originate from the Netherlands. Flemish exports go to various EU countries, with nearly 30% going to Germany. In Brussels-Capital, trade is mostly with the Netherlands (e.g. half of exports). Wallonia's exports go mostly to Germany. In *Wallonia*, trade of hazardous waste increased significantly over the review period, partly reflecting a better monitoring of waste flows. Imports for recovery or recycling[19] increased from 128 000 t in 1999 to nearly 306 000 t in 2004.[20] Most (57%) imports go to cement factories. The increase in imports reflects an increased demand by cement factories, for which waste constitutes a good and increasingly diverse source of energy, which may include animal flour (since 2000), contaminated soils following the Erika oil spill (25 000 t in 2003) or consumer goods unfit for human consumption (45 000 t in 2004). More than 30% of imports aim at recovery of (high value) metals in specialised centres. Wallonia is also equipped to recover used oils (28 000 t imported in 2004). Since 2001, imports of manure have been banned for environmental reasons (soil and groundwater protection); 41 000 t had been imported in 2000. Imports of medical and pharmaceutical wastes to specialised incinerators are on the increase, with nearly 700 t imported in 2004. Exports also

increased, from 102 000 t in 1999 to 280 000 t in 2004.[20] More and more exports (from 20% in 1999 to 70% in 2004) are channelled through collecting centres. The rest is exported directly, including acid solutions after their use for pickling by the steel industry (63 000 t in 2004), an item on the Amber list.

3.4 Tropical timber

Belgium ranks high among OECD countries as an *importer of tropical wood*, though imports of tropical logs decreased from 89 000 m^3 in 1999 to 24 000 m^3 in 2005. A significant part (45% in 2005) of imported tropical logs is re-exported, mainly to EU countries. Well aware of the traded volume, Belgium has taken steps to promote sustainable forestry and combat illegal logging. The Second Federal Sustainable Development Plan (2004-08) includes the target of eliminating illegal timber imports by 2007, and Belgium is seeking an EU position in this area, notably through support of the EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. Enforcement has consequently been strengthened at Antwerp to prevent the import of illegal harvests from old growth forests, primarily from Indonesia and Cameroon, two of the biggest timber exporting countries to Belgium. Another target of the Federal Sustainable Development Plan is the development of a new public procurement policy to promote the use of sustainable timber by federal authorities. This policy came into action in March 2006. Belgium also participates actively in the International Tropical Timber Organisation (ITTO) and was involved in several International Tropical Timber Agreement (ITTA) negotiations (latest in 2006).

Belgium has also long been engaged in *preventive actions*. Although its forest projects portfolio has slightly decreased in recent years, Belgium's development co-operation policy still supports a number of large-scale projects aimed at combating deforestation and forest degradation. Special efforts are made to help protect forests of the Congo Basin, the second largest primary forest area in the world (after Amazonia), yet seriously threatened by commercial logging. At the Johannesburg summit, Belgium pledged EUR 1.75 million to that effect, to be spent over four years. At COP-7 of the Convention on Biological Diversity, Belgium made a commitment to try to prevent illegal exploitation and trade of products coming from protected areas and areas of ecological interest.

3.5 Genetically modified organisms

The *Cartagena Protocol on biosafety* came into force in 2004 in Belgium, with the Federal Public Service for Health, Food Chain Safety and Environment as the national focal point. The Protocol's main objective is to avoid negative impacts on biodiversity

and on human health resulting from transboundary (intentional and non-intentional) movements of genetically modified organisms (GMOs). It is not subordinate to World Trade Organisation (WTO) agreements, but recognises that trade and environment agreements should be mutually supportive. Implementation (by exporters and importers of GMOs) of the Protocol involves the advanced informed agreement procedure (based on scientific risk assessment), documenting transboundary movements of GMOs, and providing information to the biosafety clearing house (BCH). Belgium's national focal point for the BCH (Service of Biosafety and Biotechnology of the Scientific Institute of Health) is recognised internationally as a model, having gained experience from a previous Belgian biosafety server launched in 1996. With financial support from the Directorate – General for Development Co-operation, a training programme for the use and development of national BCH has been organised since 2003, intended for webmasters of developing countries.

GMO field trials in Belgium were phased out in 2000 with the entry into force of the relevant EU regulations (they had previously peaked at more than a hundred per year). However, GMO pre-development in confined media remains common in Belgium, in view of their export for field trials, mainly to Argentina and the United States. Although the importing country is the main decider on whether to allow transboundary movement, *Belgian customs will verify that no unauthorised GMO leaves the country*. To do this, customs employees need specific training to help them better prepare the documentation that accompanies GMOs in their transboundary movements, as required by decisions of the meetings of the parties to the Protocol (in 2004 and 2006) and by EU regulation 1946/2003/EC on the transboundary movements of GMOs. In particular, they should be able to control the conformity of identification codes with the BCH. Belgium is finalising legislation with a view to apply sanctions to exporters in case of violation of their obligations.

5. Development Aid

5.1 Official development assistance

Belgium's official development assistance (ODA) increased from 0.35% of gross national income (GNI) in 1998 to *0.53% of GNI in 2005*, or EUR 1.4 billion (OECD, 2005). This is well above the OECD Development Assistance Committee (DAC) average (Figure 7.3). Belgium has promised to increase its aid to 0.7% of GNI by 2010, in line with commitments by the world's major countries to raise their aid levels under the Millennium Development Goals. The promise is backed by a legal commitment to increase aid by 0.05 percentage points per year, starting in 2005. Through the 2001 Bonn Declaration, in the context of the UN Framework Convention on Climate Change, Belgium has also committed itself to contributing USD 12 million a year to climate change related activities over the period 2005-07.

Belgian aid is *geographically concentrated* and Belgium is committed to the least developed countries such as the fragile states of Central Africa. The main beneficiary of Belgium's ODA has remained by far the Democratic Republic of Congo (DRC), which received nearly 30% of Belgium's ODA in 2004, despite political instability. Belgium's ten main partners[28] received 41.1% of all Belgian ODA on average in 2002-03, compared with a corresponding average rate for all DAC members of 21.4% (OECD/DAC, 2005). Bilateral ODA is predominant (60 to 80% of total ODA since 1999). Nearly 60% of Belgium's ODA goes to least developed countries (the DAC average is 33%).

Environmental protection objectives were included in the 1999 framework law for Belgium's development co-operation policy. Six strategic priorities have been identified: i) sustainable water management; ii) preventing desertification and land degradation; iii) protection and sustainable management of forests; iv) protection and sustainable management of biodiversity; v) better ecological management of urban and suburban zones; and vi) preventing and reducing the effects of climate change. Environmental impact assessments of development projects are carried out when there is threat of major environmental risks.

However, it is difficult to evaluate the attention given to environmental objectives, which Belgium regards as overlapping with objectives for poverty alleviation. Belgian co-operation is still largely characterised by a *project approach*, not a sectoral one. Little aid is devoted to the management of water resources, a key area targeted by the Millennium Development Goals. Water supply and sanitation has

remained at only 2% of Belgium's bilateral ODA since 1998 (the DAC average is 3%). Little has been done to integrate climate change in development co-operation, a priority area identified by the European Union[29] and the OECD.[30] Belgium needs to better evaluate the outcome of its aid systems, in the context of increasing ODA. The decision, in 2000, to devolve development co-operation to regions has not been enforced so far.

5.2 *Export credits*

Belgium introduced its first formal *environmental impact assessment procedure* for export credit projects in 2002. Under this procedure, EIAs will be done during the underwriting process and will apply to projects above SDR 10 million (except for projects located in a sensitive area), on the basis of international environmental standards. The procedure classifies projects into categories. A project is classified as Category A if it has the potential to have significant adverse environmental impacts. These impacts may affect an area broader than the sites or facilities subject to physical works. Category A should, in principle, include projects in sensitive sectors or located in or near sensitive areas. A project is classified as Category B if its potential environmental impacts are less adverse than those of Category A projects. Typically, these impacts are site-specific; few if any of them are irreversible; and mitigation measures are more readily available. A project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Category A projects always need an EIA; Category B projects may or may not, depending on the outcome of a questionnaire; Category C projects do not require an EIA. Both environmental and socio-cultural aspects are covered by the screening process.

However, Belgium's experience in undertaking EIA of export credit projects remains very limited. There is no *public access to the EIAs* or information exchange with international financial institutions, as insurance policies contain a confidentiality clause. There is only one consultant to help design the EIAs and train underwriters, and none of the civil servants in charge of export credit are specialised in environmental matters.