



Institute for
European
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Policy

Capacity Building for Environmental Tax Reform

Executive Summary

The Institute for European Environmental Policy (IEEP) and Partners



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KEY MESSAGES

- 1 **Experience with the use of market-based instruments (MBIs), in particular environmental taxes and charges, has grown over the past two decades.** The EU Flagship Initiative for a Resource-Efficient Europe calls for environmental taxes to account for 10% of total tax and social contribution revenues by 2020 – a substantial increase from the EU average of 6.3% in 2015.
- 2 **Environmental taxes and charges to address pollution and resource use are already in place in several European countries, with plans underway in a number of countries to introduce new instruments or to amend existing systems.** There is a diversity of practice across the study areas: air pollution; waste management, products and materials (i.e. circular economy); water quality and marine litter; water stress & availability; land use & management and biodiversity.

Key design issues and insights from best practice

- 3 Prior to the introduction of an economic instrument, it is very important to define precise objectives and to carefully tailor the design of the instrument in line with this. **Clear objectives linked to specific environmental goals can increase the acceptability of economic instruments and contribute to their success.**
- 4 The **tax rate applied and adopting a phased, predictable approach to future change** has a strong impact on the effectiveness of an economic instrument and its ability to stimulate behaviour change.
- 5 The **scope of the tax base, where/on whom it is applied and how it is calculated** can influence the effectiveness of the instrument, its ability to achieve the desired behaviour change and its acceptability.
- 6 **Managing administration costs** can help convince affected economic operators that an instrument will not be unduly burdensome (as with the plastic bag levy in Ireland for which revenue collection and reporting is easily integrated in retailers Value Added Tax (VAT) collection systems).
- 7 **Other design features can also incentivise behaviour change**, for example:
 - **Reimbursement of revenues to affected groups**, applying exemptions or reduced charges for certain activities;
 - Making **environmentally harmful activities more expensive**;
 - Increasing **awareness of the benefits** of certain activities;
 - Including specific design features to **stimulate innovation and investment**.
- 8 Introducing economic instruments as **part of a wider package of measures** can provide a window of opportunity for their establishment and ensure coherence with other policies.
- 9 **Clear communication** by policy makers to affected stakeholders and civil society **is critical to the success of an economic instrument and can help increase acceptance.**
- 10 **How revenues from economic instruments are used has an important influence** on the impact and effectiveness of the instrument, its political and public acceptability, its potential to mitigate adverse impacts and overcome obstacles.
- 11 **Regular monitoring and evaluation** of the impact of instruments (including unintended impacts) **and subsequent revisions** are critical to ensure their continued effectiveness.

Role and importance of civil society engagement

- 12 **Civil society organisations have played a range of different roles in a wide range of economic instruments to address pollution and natural resource use** – they have had varying levels of engagement with and influence over the design, introduction and implementation of economic instruments in the EU-28.
- 13 In the **problem recognition and policy formulation stage**, civil society can play an important role in helping to make a **case for the introduction of economic instruments by identifying the need for (further) action**.
- 14 In the **decision-making phase**, civil society can **shape the design of economic instruments through engagement in stakeholder consultation processes and help increase their acceptance**.
- 15 Civil society can also **support the implementation of economic instruments**, for example by being involved in instrument management, helping to decide on changes to fees and distribution of revenues, and raising awareness on economic instruments. Experience at this part of the policy cycle has however been limited to date.
- 16 There are also a limited number of examples of civil society being involved at the **policy monitoring phase**, for example by monitoring and reporting on emissions or monitoring beach litter.
- 17 Finally, civil society organisations can usefully be engaged at the **policy evaluation stage** to gather evidence on the impacts of instruments which can support an evidence-based revision of the instrument to increase its effectiveness.

The way forward

- 18 **It is increasingly clear that correcting economic signals will be a core part of the solution to addressing multiple sustainability challenges** from resource scarcity, water scarcity and air pollution to biodiversity loss and marine litter among others.
- 19 Civil society organisations have undoubtedly been **effective on many occasions** at **making the case for environmental tax reform**, but have **often missed or not been afforded opportunities to engage at other stages of the policy cycle**, in particular with implementation.
- 20 There is much to learn from these experiences to date – and **an accelerated peer-to-peer, Member State to Member State, exchange could be a promising way forward, and valuable complement to (soft) harmonisation approaches already being adopted**.
- 21 **Policy- and decision-makers should arguably engage more with civil society** to use its expertise to promote change with wide-ranging citizen support. Governments are public servants, there for public interest, and civil society have their fingers on the public pulse and provide a voice to the public. There should therefore be a **natural cooperation to meet common objectives** – access to a clean environment and safeguarding resources for both this and future generations.
- 22 Collaborating to get signals in the economy to support these objectives is a question of good governance, and **there remains scope for further efforts in this area**. This offers the **potential for economic, budgetary, social and environmental benefits**, as well as **helping to implement policy commitments and incentivise a transition to a resource efficient, circular economy** that safeguards natural assets, supports the implementation of the sustainable development goals (SDGs) and heads towards a pollution free environment for European citizens.

1 CAPACITY BUILDING & ENVIRONMENTAL TAX REFORM

Experience with the use of market-based instruments (MBIs), in particular environmental taxes, has grown over the past two decades. Such instruments are an important part of the policy mix to support the transition to an inclusive green economy and attracting increasing attention. Within the EU, calls for further action on environmental taxes and subsidy reform have appeared in several country-specific recommendations under the European Semester and in policy discussions on climate change, resource efficiency, marine litter and the circular economy. The EU Flagship Initiative for a Resource-Efficient Europe calls for environmental taxes to account for 10% of total tax and social contribution revenues by 2020 – a substantial increase from the average of 6.3% in 2015 in the EU-28.

Environmental taxes and charges are already in place in all EU Member States European countries, with plans underway in a number of countries to introduce new instruments or to amend existing systems. The main focus of efforts to date has been in the area of energy, transport and climate, with limited action in relation to issues of pollution and resource use. However, despite growing interest and some positive trends, MBIs are not widely used in the environmental area. In the EU, revenues from environmental taxes amounted to just 2.4% of EU-28 GDP, with significant diversity in national experiences ranging. Moreover, current environmental taxes have only led to relatively marginal changes in the tax system and incentives in the economy as a whole, partly due to how they have been designed and implemented to date. Thus, there remains scope for the wider application and more effective use of such instruments, particularly in the areas of pollution reduction and natural resource management, which could lead to further economic, social and environmental benefits.

To contribute to the broader use of MBIs within environmental policy, this study for the European Commission, carried out by the Institute for European Environmental Policy (IEEP) and partners, investigated the use of economic instruments to address pollution and resource use and the role of civil society stakeholders in their introduction, development and implementation. In particular, the study aimed to improve the knowledge base on existing economic instruments in the EU-28, stimulate exchanges of experience and best practice and build civil society capacity to participate in MBI policy processes at the national and EU levels.

Through detailed case studies on 40 specific economic instruments across the EU-28 (see Table E1) and a **series of regional workshops focused on five environmental themes**, the study has identified key design features for successful economic instruments. It also explored the roles that civil society has played in the development and implementation of such instruments, areas where more engagement is needed, and opportunities for future civil society participation in the policy process.

This summary presents the results of the study across five environmental themes: **Air pollution; Waste, Resources and the Circular Economy; Water quality and marine litter; Water stress and availability; Biodiversity and land-use and management.**

Table E1 Market based instruments in Europe & case studies selected for analysis

	Air pollution	Waste management & products	Materials	Water quality	Marine litter	Water stress & availability	Land use & management	Biodiversity
	NOx taxes/fees, SOx taxes/fees, PM taxes/fees and other air pollution taxes/fees	Incineration tax, Landfill tax, Pay-as-you-throw (PAYT) Scheme, Packaging tax, Plastic Bag fee, Product fee, Deposit Refund Scheme, Producer fee	Aggregates tax, Natural Resource tax	Fertilizer tax, Pesticide tax, Waste water charge/tax, Other pollution tax, Natural resource tax, Other	Packaging tax, Plastic bag fee, Product fee, Producer fee, Other waste tax, Other	Water abstraction tax/charge; water pricing including cost recovery	Land taxes, PES, timber/ forestry/ stumpage fees, pesticide and fertilizer taxes	Stumpage fee, pesticide tax, fertilizer tax, wildlife/hunting tax, PES, ITQs, offsets / habitat banking
Austria		Landfill tax						Vienna tree protection act
Belgium		Packaging charge and Environmental charge, Pay-as-you-throw			Packaging taxes			
Bulgaria						Water abstraction charge		
Croatia								Forest Public Benefit Fee
Cyprus						Water pricing		
Czech Republic	Air pollution fee (PM ₁₀ , SO ₂ , NOx)							
Denmark				Pesticide tax; Animal feed mineral phosphorus tax			Tax on animal feed mineral phosphorus	
Estonia			Natural resources charges					Hunting and fishing fees
Finland		Deposit refund scheme	Peatland tax reform		Deposit refund scheme & packaging tax			Peatland tax reform
France						Water abstraction charges		
Germany							Biodiversity offsetting; Result-based agri-environment measure	
Greece		Landfill tax						
Hungary	Air pollution load charges (SO ₂ , NOx, non-toxic dust)							
Ireland		Plastic bag levy			Plastic bag levy			Fishing fees
Italy				Phytosanitary product tax			Phytosanitary product tax	
Latvia		Packaging tax			Packaging tax			
Lithuania		Environmental pollution tax			Environmental pollution tax			
Luxembourg		Pay-as-you-throw						
Malta						Water pricing		
Netherlands		Pay-as-you-throw			Rotterdam & Amsterdam port fee reductions	Taxes/fees of regional water authorities		
Poland				Wastewater fee				
Portugal						Water resources fee		Ecological fiscal transfers

	Air pollution	Waste management & products	Materials	Water quality	Marine litter	Water stress & availability	Land use & management	Biodiversity
	NOx taxes/fees, SOx taxes/fees, PM taxes/fees and other air pollution taxes/fees	Incineration tax, Landfill tax, Pay-as-you-throw (PAYT) Scheme, Packaging tax, Plastic Bag fee, Product fee, Deposit Refund Scheme, Producer fee	Aggregates tax, Natural Resource tax	Fertilizer tax, Pesticide tax, Waste water charge/tax, Other pollution tax, Natural resource tax, Other	Packaging tax, Plastic bag fee, Product fee, Producer fee, Other waste tax, Other	Water abstraction tax/charge; water pricing including cost recovery	Land taxes, PES, timber/ forestry/ stumpage fees, pesticide and fertilizer taxes	Stumpage fee, pesticide tax, fertilizer tax, wildlife/hunting tax, PES, ITQs, offsets / habitat banking
Romania		Packaging charge (Producer Responsibility)			Packaging tax			
Slovak Republic	Air pollution fee (PM ₁₀ , SO ₂ , NOx)							
Slovenia							Payments for private forest management	
Spain	Tax on fluorinated greenhouse gases						Mature forest payments in Girona province	
Sweden	NOx fee and SO ₂ tax			Fertilizer tax			Fertilizer tax	Fertilizer tax
United Kingdom		Landfill tax	Aggregates Levy					
Others								Iceland: Fisheries ITQ and Resource tax

* The instruments for analysis were selected: on the grounds of environmental/thematic interest; to ensure coverage of a wide range of instrument types; and to ensure appropriate geographical coverage and balance (to give each country at least one in-depth case study). Please note that the table is not intended to be a full and comprehensive picture of all instruments in place around Europe, but rather to give an indication of the widespread use of such instruments. Insights on additional practice are welcome.

2 AIR POLLUTION

Air pollution remains a significant environmental concern and is the single most important health challenge in Europe. In addition to impacts on human health, air pollution also has impacts on the environment (e.g. excessive nutrients, destruction of ecosystems) and the economy. Despite existing legislation, air quality remains problematic in many cities and regions across the EU with regular exceedances of air quality standards and in EU target and limit values for specific pollutants, especially particulate matter, ozone and nitrogen oxides.

Different types of economic instruments can be used to address air pollution, for example taxes and charges on various air pollutant substances (e.g. NO_x, SO₂, PM, NH₂, heavy metals, VOC, CO, NH₃, hydrocarbons, dust, cadmium, mercury, asbestos; and ozone depleting substances) and air pollution non-compliance fees. Cases examined in the study focused on the following air pollution related instruments:

- Air pollution fees in the Czech Republic and Slovakia;
- Air pollution load charges in Hungary;
- NO_x fee and SO₂ tax in Sweden; and
- Tax on fluorinated greenhouse gases in Spain.

The design of these instruments varies significantly in terms of the rates applied, changes over time and complementary policies in place. The rates applied have had a strong impact on the effectiveness of the instruments and their ability to stimulate change in industry behaviour. Some instruments have been designed to incentivise further emission reductions by industry. For example, the 2012 revision of the Czech air pollution fee reduced the fee paid by businesses that achieve lower emission levels compared to best available technologies (BAT) emission concentrations. Revenues from the Swedish NO_x fee are reimbursed to plants based on their energy efficiency, thus providing an economic incentive to regulated plants to achieve further emission reductions.

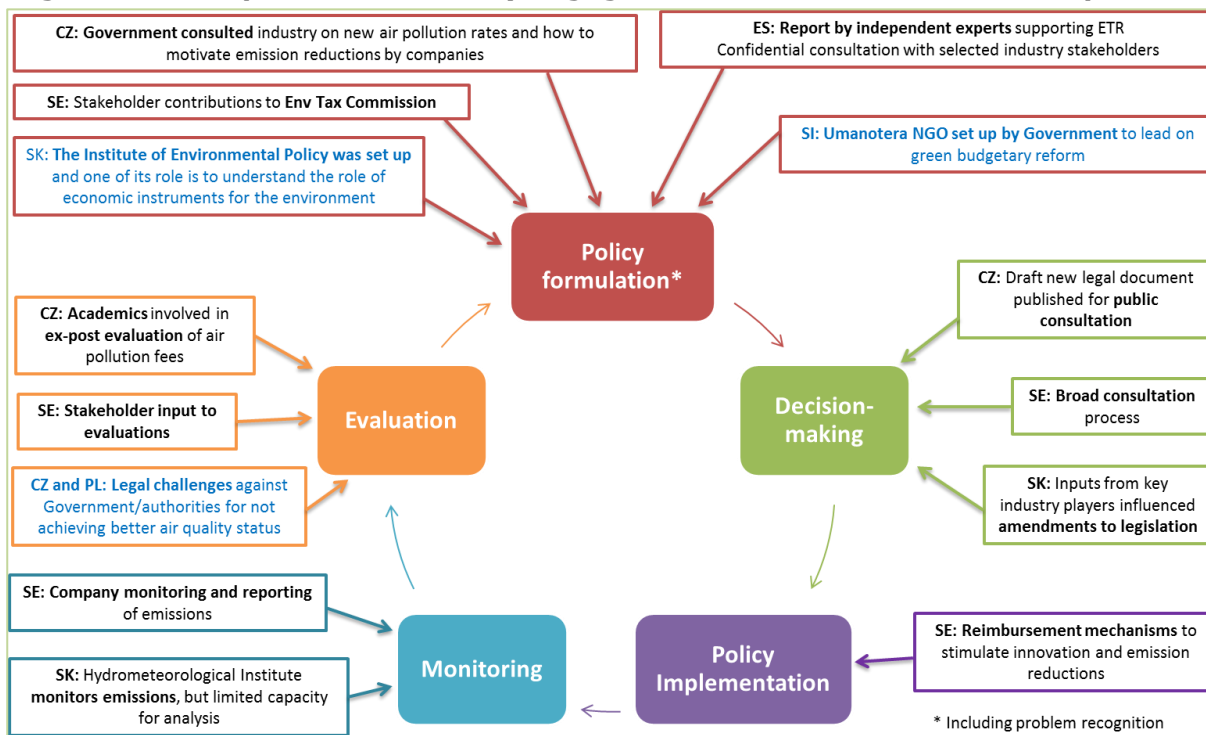
The scale of revenues raised by the instruments and their use varies significantly across the countries. In some cases, revenues are allocated to the general budget (e.g. Hungary, Spain), while in others revenues are used to support environmental projects and activities (e.g. Czech Republic, Poland, Slovakia) or reimbursed to regulated entities (e.g. Sweden which has helped reduce potential negative impacts of the tax on competitiveness and helped increase acceptance of the tax among industry).

Drivers supporting the adoption of these instruments range from fiscal considerations (e.g. in Spain, Czech Republic, Slovakia) to **changes in the political context** and **rising public awareness** of environmental issues (e.g. in Sweden).

The effectiveness of the instruments has varied significantly depending on a number of factors including the level of fees applied, the wider policy mix and the administrative burden. For example, the low level of air pollution fees in Slovakia, Poland and the Czech Republic (until 2012) provided little incentive for companies to decrease their emissions and other policies (e.g. legal emission limits and penalties), a decline in production in heavy industry and changes in production processes/technologies are considered more important factors in the improvement of air quality in these countries since the early 1990s. It is difficult to assess the effectiveness of some instruments due to a lack of data (e.g. Spain), limited capacity to analyse available data (e.g. Hungary) and challenges related to assessing the effectiveness of these instruments in isolation from the impacts of the wider air quality regulatory framework (e.g. air quality legislation and permits).

Civil society including government bodies, industry, NGOs, the public and academics played an important role in the policy process (see Figure E1), with engagement ranging from participation in informal discussions (e.g. Slovakia) to more collaborative processes (e.g. Sweden, Czech Republic). In some cases, formal stakeholder engagement has been limited or non-existent in the policy formulation phase (e.g. in Spain), while in others stakeholder inputs from a few prominent actors have played an important role in the policy process (e.g. in Hungary).

Figure E1 Examples of civil society engagement with instruments for air pollution



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

These experiences with economic instruments in the area of air pollution highlight a number of lessons including: the importance of certain design aspects such as the definition of tax-payers; how the participation of key stakeholders can facilitate the adoption of an instrument; the importance of regular monitoring and review which can support the adoption of more effective instruments; how instrument design can influence effectiveness, encourage further emission reductions and stimulate innovation; and the role of the wider policy mix.

3 WASTE, RESOURCES AND THE CIRCULAR ECONOMY

Waste management has been an important issue for the EU and its Member States for many years, due to its potentially significant environmental impacts including greenhouse gas emissions from landfills, land, water and air pollution, and littering. In recent years, attention has moved from simply managing waste towards opportunities to create a circular economy and improve resource efficiency. In 2012, total waste generation in the EU was over 2.5 billion tonnes¹, representing almost 37% of material consumption. Policies dealing with specific product streams at the end of their useful life, and sustainable raw material use, are therefore crucial for resource efficiency and a circular economy.

Economic instruments in this area include waste taxes, packaging taxes, plastic bag and other product fees, deposit refund schemes, pay-as-you-throw (PAYT) schemes, raw material and aggregates taxes, and natural resource taxes and charges. Instruments relating to waste management and products are much more common than those targeting the extraction of natural materials. Cases examined in the study focused on the following instruments:

- Austrian landfill tax (and ban), UK and Greek landfill taxes;
- Benelux pay-as-you-throw (PAYT) schemes;
- Belgian, Latvian and Romanian packaging taxes/charges;
- Finnish beverage container deposit refund scheme (DRS) and packaging tax;
- Irish plastic bag levy;
- Lithuanian environmental pollution tax;
- UK aggregates levy;
- Estonian mineral resource extraction charge; and
- Finnish tax on the use of peat for energy.

The scale of revenues raised by the instruments and their use varies across the Member States. In several cases (e.g. Belgian and Latvian packaging taxes, UK aggregates levy revenues accrue to the general budget. In others they are allocated to national environmental funds or bodies (e.g. UK landfill tax, Romania, Ireland, Estonia), used to support waste management activities (e.g. Benelux, Lithuania), or for very specific purposes such as site remediation (Austria). Payers range from landfill site operators, producers and businesses to householders and consumers.

Drivers supporting the adoption of these instruments include the need to achieve specific environmental objectives (e.g. in UK, Austria, Benelux, Finland, Ireland, Lithuania, Estonia) and to **apply aspects of EU legislation** (e.g. in Greece, Luxembourg, Romania, Latvia and Lithuania). In other cases, instruments were introduced based on expert recommendations or policy evaluations (e.g. UK, Finland, Ireland, Lithuania), or thanks to the efforts of a political or stakeholder 'champion' (e.g. Ireland, UK aggregates levy, Belgium, Finland). In some cases, instruments formed part of a wider package of measures (e.g. Austria, Estonia, Benelux).

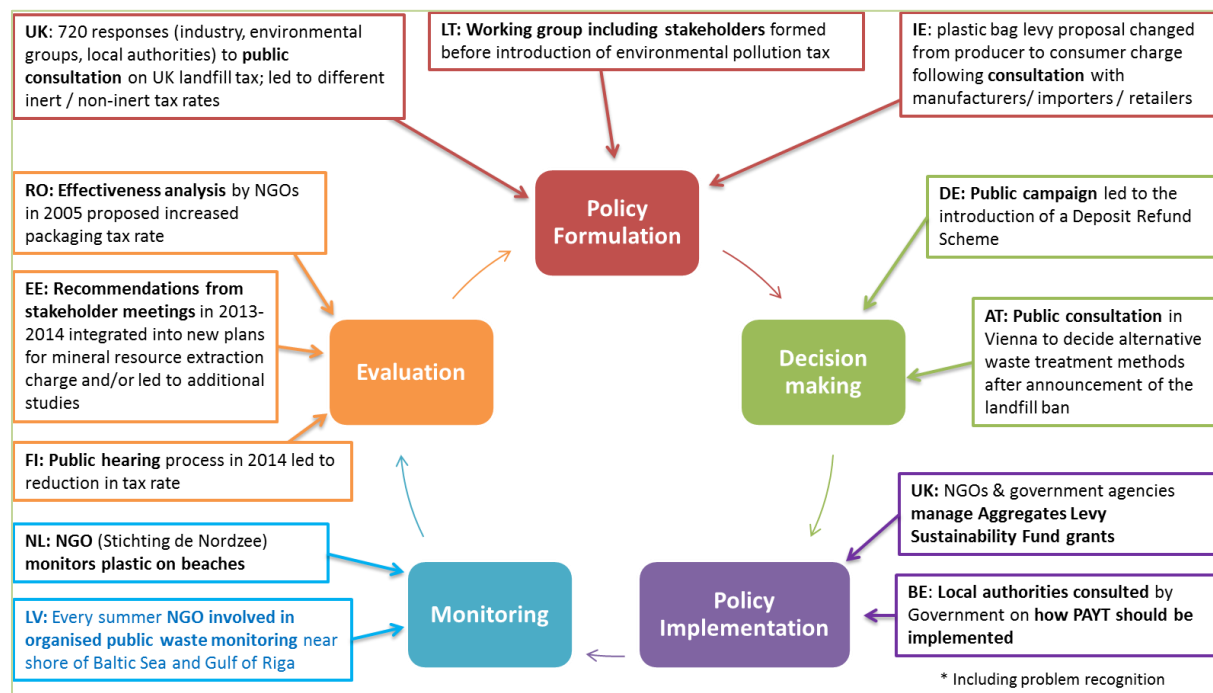
The effectiveness of the instruments has varied considerably depending on several factors, including the level of rates/fees applied (and advance warning of changes), **the wider policy mix, successful engagement and communication with stakeholders, and efficient administration to reduce implementation costs.** In some cases, implementation has been hampered by stakeholder opposition (e.g. Belgium, Estonia, Greece) or by lack of cooperation between government departments (e.g. Estonia). Amongst the instruments leading to the greatest environmental benefits are the UK and Austrian landfill taxes (reduced landfilling and site remediation respectively), Benelux pay-as-you-throw schemes (reduced household waste generation), the Finnish

¹ Eurostat (2016) Generation of waste by economic activity, Code: ten00106

deposit return scheme (with 90% collection rates for both one-way cans and PET bottles), and the Irish plastic bag levy (a sharp decline in plastic bag use). In other cases the environmental impacts are mixed (e.g. Lithuania, Latvia), harder to separate from the impacts of other instruments in the policy mix (e.g. Belgium, Romania), or seem to be negligible (e.g. Estonian mineral resource extraction charge, Finnish peat energy tax). The instruments present a mixed picture of economic impacts on businesses, from broadly positive (e.g. Ireland, Lithuania) to rather more negative (e.g. Romania, Estonia).

Civil society including governmental bodies and political parties, waste operators/waste management companies and producer responsibility organisations (PROs), industry and producers, consumers/the public and (environmental) NGOs have had varying levels of involvement with and influence over the design, introduction and implementation of the instruments (see Figure E2). Engagement ranges from wide-ranging public consultation (e.g. UK, Austria) and consultation with concerned stakeholders (e.g. PAYT in Belgium, Ireland, Finland) prior to an instrument’s introduction, to stakeholder inclusion in working groups and boards (e.g. Lithuania, Latvia), and involvement in the evaluation and review of instruments (e.g. Estonia, Romania) and allocation of revenues (UK aggregates levy). In other cases civil society engagement has been more limited (e.g. Belgian Environmental Charge).

Figure E2 Examples of civil society engagement with instruments for waste management, products and materials



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

The experiences with economic instruments on waste management, products and materials highlight a number of lessons, including: the benefits of a specific and explicit link to environmental goals; the potential benefits of earmarking revenues for environmental purposes; the importance of design aspects such as predictable rate increases and ensuring fairness to those who pay; ensuring the presence of supporting infrastructures (e.g. for waste management) for implementation; the need for sound implementation and monitoring and the possibility to review instruments to improve their effectiveness; coherence between relevant instruments and policies allowing increased effectiveness; tailoring instruments to a country’s social and economic context; and the benefits of stakeholder engagement in design and implementation.

4 WATER QUALITY AND MARINE LITTER

Although water quality status in the EU is gradually improving, 90% of river basin districts, 50% of surface water bodies and 33% of groundwater bodies are estimated to be affected by diffuse pollution, primarily from the agriculture sector². Implementation of the Urban Waste Water Treatment Directive (91/271/EEC) has been 'challenging', with sewer overflows remaining a key pollution source in urban areas. In the marine environment, pressures arise from anthropogenic loads of phosphorus, nitrogen, organic matter and hazardous substances, as well as marine litter, in particular the significant amount of waste plastic that reaches the marine environment. There is increasing scientific evidence of impacts on the environment, ecosystems and human health, meaning that further action is required.

Economic instruments applicable in the area of water quality include wastewater charges, pesticides taxes and fertilizer taxes. Cases examined in the study focused on the following instruments:

- Danish pesticide tax;
- Danish animal feed mineral phosphorus tax;
- Swedish fertilizer tax.
- Italian phytosanitary product tax;
- Polish wastewater fee;
- Dutch port fee reductions (in Rotterdam and Amsterdam);
- Belgian, Latvian and Romanian packaging taxes/charges;
- Finnish beverage container deposit refund scheme (DRS) and packaging tax;
- Irish plastic bag levy; and
- Lithuanian environmental pollution tax.

The scale of revenues raised by the instruments varies significantly across the Member States. In some cases, **revenues are earmarked for different purposes**, for example being **recycled back to the agricultural sector** through reduction of land value taxes (Denmark), **used to develop organic farming** (Italy), or **used for investment in environmental protection** (Poland). Ideally tax/charge rates should reflect pollution damage costs (external costs), whilst earmarking of revenues for a full or partial reduction in other tax burdens for relevant target groups may leverage political effectiveness. Payers are typically farmers, product users, manufacturers and businesses/industry.

Several of the instruments had a stated environmental objective behind their introduction, aiming to address pollution by specific substances (Denmark, Sweden, Italy, Poland, Ireland). In Denmark and Italy, the taxes also aimed to **address human health risks**. Some instruments were introduced based on the recommendations of experts or policy evaluation processes involving stakeholders (e.g. Sweden, Denmark). Some formed part of a wider package of measures (e.g. Denmark, Netherlands). The need to apply specific legislation has also been a driver for the introduction of instruments (e.g. in Denmark, Poland).

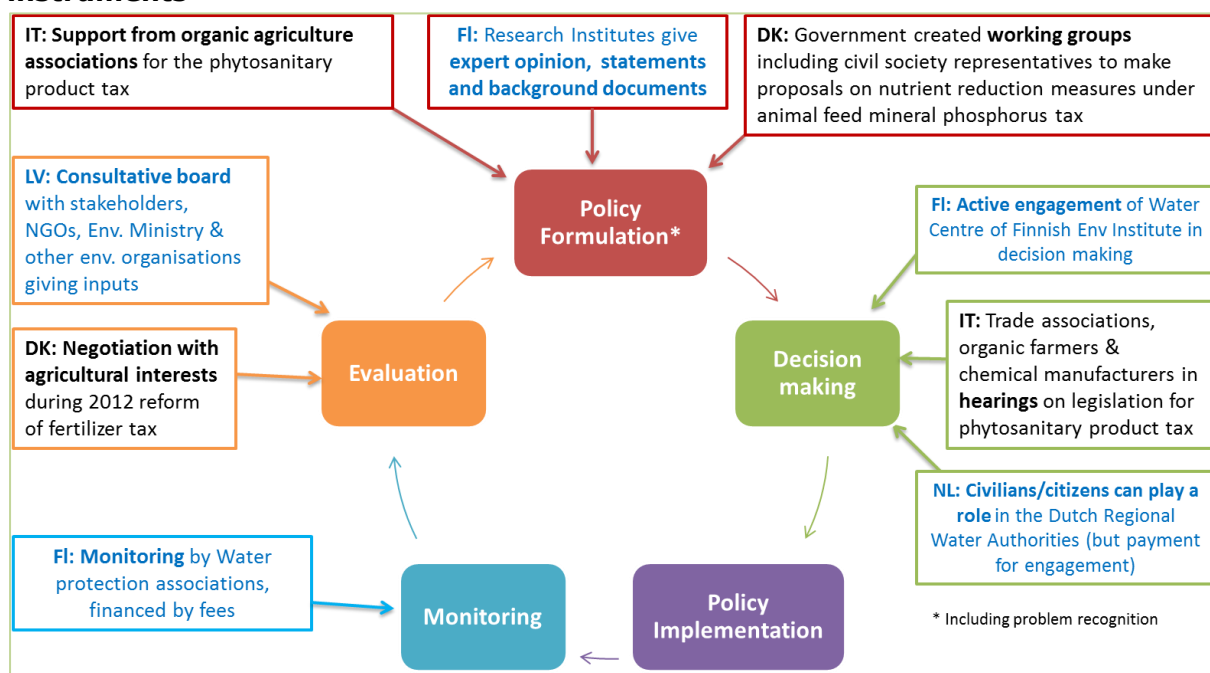
The environmental effectiveness of the instruments has been varied. The Swedish fertilizer tax is estimated to have led to a reduction in previously common excessive 'precautionary' applications of fertilizers, and reductions in phosphorus and cadmium content. The environmental impact of the Danish animal feed mineral phosphorus tax has weakened over time by the tax rate not being adjusted with inflation, but the Danish pesticide tax has undergone several stages of reform to improve its environmental effectiveness. It is harder to disentangle the specific environmental impacts the Italian tax from other factors, or those of the Polish wastewater fee from general improvements in

² COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL: The Water Framework Directive and the Floods Directive: Actions towards the 'good status' of EU water and to reduce flood risks, COM(2015) 120 final, Brussels, 9.3.2015

wastewater treatment and water protection due to significant infrastructure investments. The economic impacts of some instruments (e.g. Italy) are assumed to be very limited, whilst others (e.g. Sweden) may have led to some modest competitive disadvantage in the absence of similar instruments in other Member States. Where identified, the social impacts of instruments have ranged from variable (e.g. Danish pesticide tax), to broadly positive, contributing to increased organic agricultural production in Italy and positive redistributive effects in Poland.

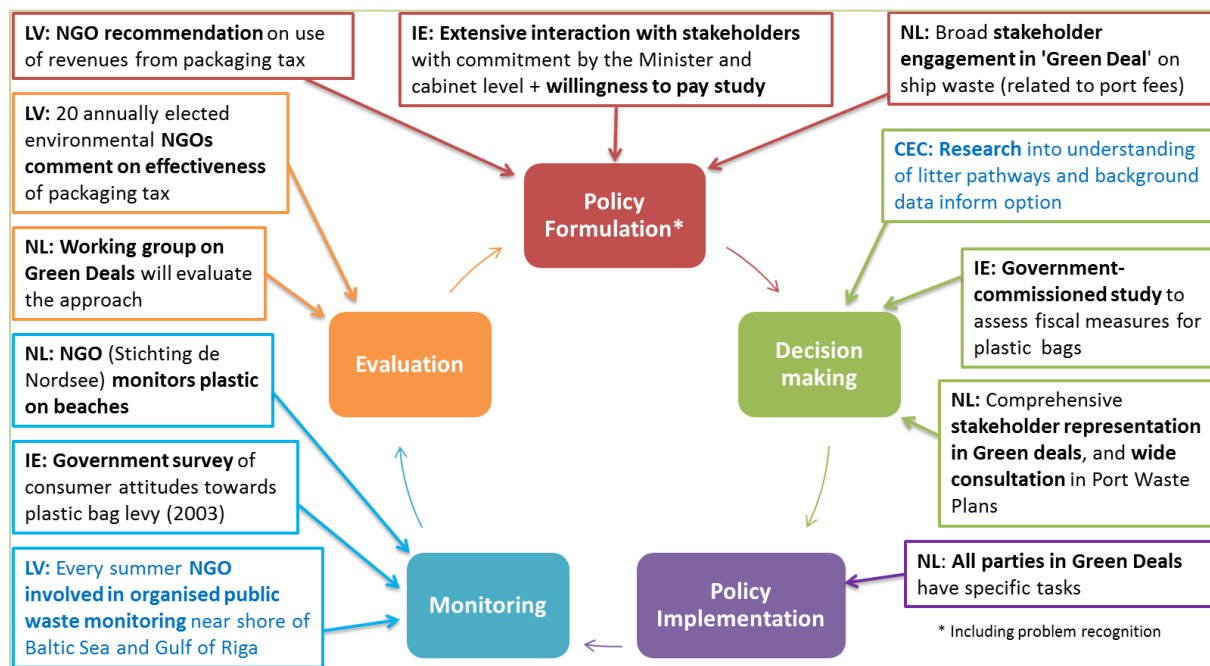
Civil society including governmental bodies and political parties, the agriculture sector, trade associations, chemicals manufacturers, scientific experts and (environmental) NGOs have played various roles in the policy process, with varying levels influence over the design, introduction and implementation of instruments related to water quality (see Figure E3 and Figure E4). Engagement has ranged from civil society helping to raise the profile of the issue being addressed (e.g. Ireland), through formal consultation with stakeholders prior to the introduction of an instrument (e.g. Danish phosphorus tax, Poland) and lobbying by interested parties (e.g. Italy, Poland), through to the evaluation of an instrument's effectiveness (e.g. Latvia). Occasionally, civil society has had a role at each stage of the policy cycle, from policy development to implementation, monitoring and evaluation (e.g. Netherlands).

Figure E3 Examples of civil society engagement with water quality-related instruments



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

Figure E4 Examples of civil society engagement with instruments related to marine litter



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

A number of lessons can be drawn from the case studies related to water quality and marine litter, including: the importance of strong design to avoid loopholes that allow non-payment of a tax or fee; the need to ensure all relevant products are within the scope of a tax; the importance of sound implementation, enforcement and monitoring of instruments to ensure their success; the benefits of engaging stakeholders in the design and implementation of instruments; and the positive impacts of the appropriate use of revenues, including earmarking for environment-related purposes.

5 WATER STRESS & AVAILABILITY

Problems of water stress and lack of fresh water availability are prevalent across some parts of Europe and are expected to be further exacerbated in the coming years as a result of climate change. Despite the adoption of several pieces of legislation and progress in some areas, almost half of Europe's water bodies missed the Water Framework Directive (WFD) target to reach good ecological status in 2015 and other provisions of the Directive, such as on water pricing, are not yet fully implemented.

Economic instruments applicable in the area of water stress and availability include: taxes and charges on water abstraction, water pricing policies, water trading systems and payments for ecosystem services (PES). A number of these instruments are in place in EU Member States with significant variations in coverage and the nature of the instrument applied. Although in many countries there is cost recovery of water services (in that prices cover operating costs), the environmental costs of water supply are rarely integrated in water pricing systems, with due exceptions such as Denmark. Cases examined in the study focused on the following water stress related instruments:

- Abstraction charge in Bulgaria;
- Water pricing in Cyprus;
- Water abstraction charges in France;
- Water pricing in Malta;
- Taxes and fees of regional water authorities in the Netherlands; and
- Water Resources Fee in Portugal.

In terms of the **design of these instruments, the rates applied vary by user** (e.g. domestic, industry, agriculture), **source** (e.g. groundwater or surface water) and in some cases **by location** such as in France, the Netherlands and Cyprus to take into account relative water scarcity and pressure of abstraction on available water resources. Exemptions are sometimes applied for different users and the burden of the water charges varies between different types of water use, for example in France, the Netherlands and Portugal, households pay much more for water use than agriculture and industry. Some instruments include incentives to encourage behaviour change such as charging lower base values for residual water use in Portugal.

The scale of revenues raised by the instruments and their use varies. In some countries, **revenues go to the general government budget** (e.g. Cyprus), in others revenues are **allocated to water management related activities**, including **environmental protection** (e.g. Bulgaria), or to **finance activities of water agencies** (e.g. France, the Netherlands).

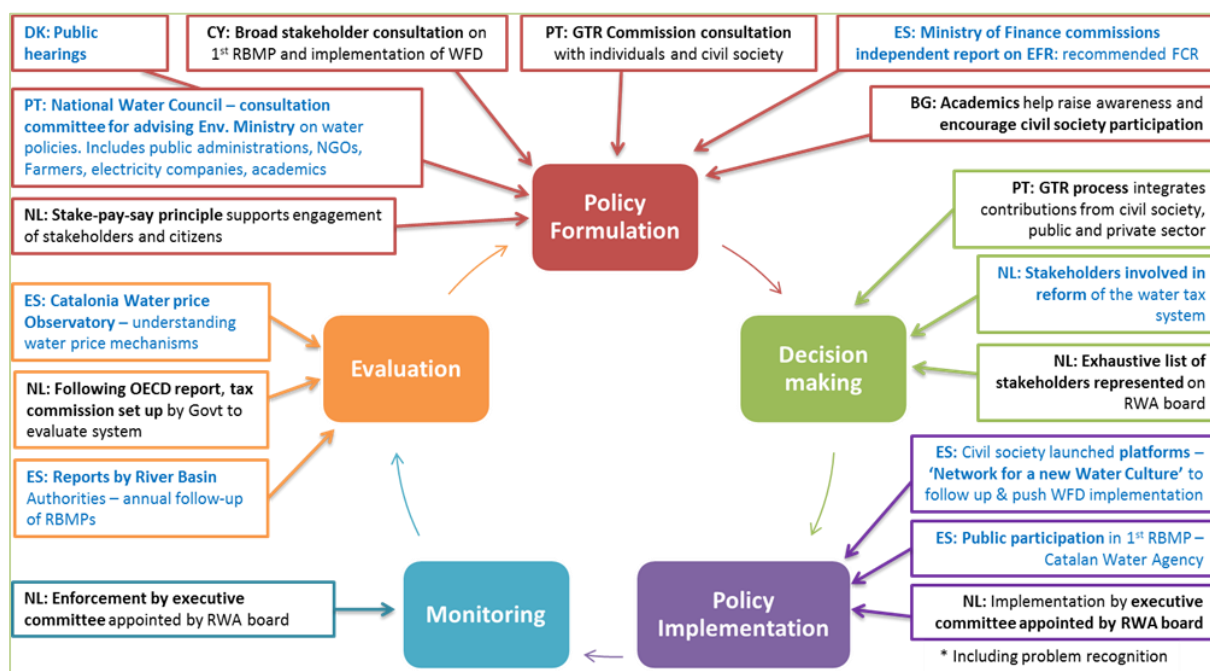
The effectiveness of the instruments has also varied significantly between countries. The low level of charges have had a limited incentive effect in some countries (e.g. in Portugal and France) and other policies/factors have influenced overall abstraction rates (e.g. high water pollution charges and variable charges in France, illegal boreholes in Malta, subsidies for energy produced by small and medium hydropower plants in Bulgaria). Some instruments have had notable impacts such as the application and substantial increase of the Dutch water pollution levy which has contributed to a decline in emissions discharged to open water, an increase in rates of pollutants removed by waste water treatment and stimulated innovation in the sector.

The need to implement specific pieces of legislation, in particular the EU WFD, has played an important role in the introduction and reform of instruments in this area in Portugal, Bulgaria and France. Another key driver for action in this area are **concerns relating to water scarcity**, as has been the case in Malta. Windows of opportunity for further action include meeting EU legislative requirements (e.g. on water pricing reform under the WFD in Cyprus, application of (higher) charges/taxes for

agriculture-related water use in the context of future reforms of the Common Agricultural Policy) and evaluations by external actors (e.g. an OECD report initiated a process to evaluate the Dutch levy system). Barriers to effective action on water pricing include political barriers (e.g. in Cyprus), a lack of transparency, and vested interests from certain sectors such as the agriculture sector (e.g. in France, the Netherlands).

Civil society including governmental bodies, water agencies, consumer associations and citizens, businesses, farmers’ associations, environmental NGOs and academics have participated to varying degrees and at different stages in the policy cycle (see Figure E5). In countries such as France and the Netherlands where the main responsibility for water charges lies at the regional or sub-national level, stakeholders are engaged in policy processes either directly or indirectly, in others stakeholders have been engaged in policy evaluation processes (e.g. Portugal, Cyprus) while in some countries the policy process has been criticized for a lack of transparency and inclusiveness (e.g. Bulgaria).

Figure E5 Examples of civil society engagement with instruments for water stress and availability



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

These experiences with economic instruments in the area of water stress and availability highlight a number of interesting lessons including: the use of revenues from water abstraction charges in supporting environmental protection and management; important design considerations for cost recovery levies including the specifics of the levy base; underlying principles such as ‘water pays for water’, reflecting various components of the fee in different economic sectors; incentives to encourage behaviour change such as charging lower base values for residual water use and charges proportional to the amount of water abstracted so that the marginal cost of water use is never zero. Furthermore, transparent, accurate information on the impacts of water pricing can help overcome political barriers to further action.

6 BIODIVERSITY AND LAND-USE & MANAGEMENT

Loss of biodiversity has reached an unprecedented pace in the EU, with the assessment of the Habitats Directive for 2007–2012 showing that only 23% of assessed animal and plant species and 16% of the assessed habitat types were in a favourable conservation status in that period, with 60% of species and 77% of habitats in unfavourable conditions. Whilst the EU Biodiversity Strategy to 2020 aims to halt the loss of biodiversity and ecosystem services and to restore ecosystems where feasible, the mid-term review shows that whilst progress has been made, biodiversity loss and ecosystem degradation are continuing. With almost half of EU land covered by farmland and over 42% by forests and woodland, proper management of these land uses can play a key role in the conservation and maintenance of biodiversity, as well as carbon storage, water regulation, protection against natural disasters, reduction of soil erosion, and provision of recreational activities.

Economic instruments can be used to improve the sustainability of agricultural and forest land to complement the legislation in place on pollution limits and required management practices. Examples include fertilizer and pesticide taxes, fishing and hunting fees, public and/or private financing for the conservation and sustainable use of forests, and payments for ecosystem services. The following cases were examined:

- Austrian tree protection act (Vienna);
- Croatian Forest Public Benefit Fee;
- Forestry-related payments in Slovenia and Spain (Girona province);
- Danish pesticide tax;
- Danish animal feed mineral phosphorus tax;
- Italian phytosanitary product tax;
- Swedish fertilizer tax;
- Irish fishing fees and Estonian hunting/fishing fees;
- Icelandic fisheries instruments;
- German result-based agri-environment measure (Baden Württemberg)
- German biodiversity offsetting;
- Portuguese ecological fiscal transfers; and
- Finnish tax on the use of peat for energy.

The scale of revenues and their use varies across the analysed instruments. In several cases, the revenues are **earmarked for environmental projects and activities** (e.g. Italy, Croatia, Estonia, Ireland, Iceland, Austria, Germany). In **other cases there is no earmarking**, for example in the case of Portuguese ecological fiscal transfers (EFTs), where municipalities can decide how to use revenues. Earmarking is not relevant for several other instruments, which instead aim to remunerate environmentally beneficial activities, for example through payments for ecosystem services (e.g. Germany, Spain, Slovenia).

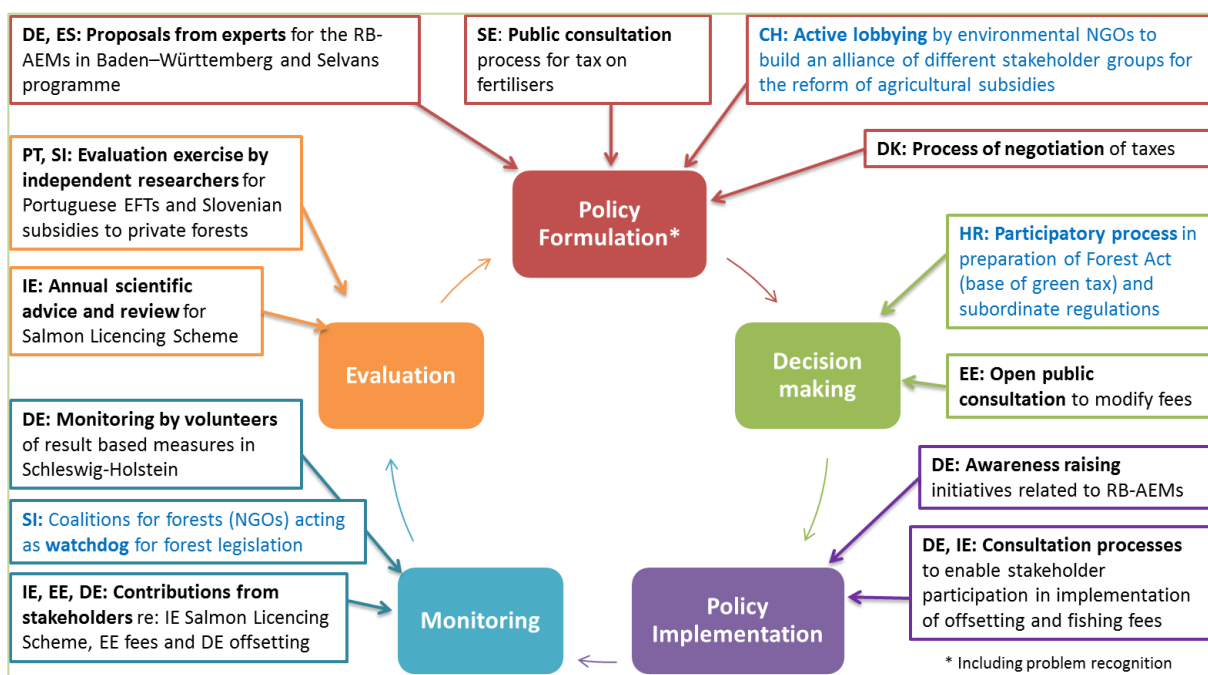
Many of the instruments were introduced as part of a wider package of measures which offered a window of opportunity for their establishment (e.g. Denmark, Slovenia, Portugal, Germany, Ireland, Croatia, Estonia, Iceland, Italy). In several cases, experts have identified the need for (improved) instruments (e.g. Ireland, Denmark, Italy, Spain, Slovenia, Portugal). The increased use of RB-AEMs is partly in response to the desire for more cost-efficient and effective CAP-related instruments. Meanwhile, one important barrier to the introduction of subsidy-based instruments is the lack of financial resources.

The environmental effectiveness of some of the taxes has been limited so far, sometimes due to inadequate design (e.g. Finland) and the low level of taxes (e.g. Danish phosphorus tax). **Other instruments have had more significant impacts**, such as reduced salmon fishing (Ireland), recovering fish stocks (Iceland), improved forest management (Croatia) and reduced sales of certain phytosanitary products (Italy). Whilst

the impact of subsidies to farmers or forest owners tends to be difficult to assess, the results of the cases in this study appear variable, with the land area being covered by some instruments declining (e.g. Slovenia, Germany), but with increased or maintained levels of coverage in others (e.g. Spain, Vienna). For several of the instruments studied, the environmental impacts have not yet been formally estimated (e.g. German offsetting, Estonia, Portugal). Some positive economic impacts have been observed, including job creation (German offsetting), more economically profitable fisheries (Iceland) and contributions to municipal budgets (Portugal), although some job losses have also occurred (Iceland). Social benefits of the instruments include increased opportunities for research, recreational and tourism activities related to forests (Spain, Slovenia, Croatia) and demining of land allowing land to be constructively used again (Croatia).

Civil society bodies that have engaged with biodiversity and land-use related instruments include farmers' organisations, hunters and fishermen, fertilizer producers, landowners, coastal communities, (environmental) NGOs and scientific experts and academia (see Figure E6). Types of engagement have included formal public consultation processes (Denmark, Sweden, Ireland, Iceland, German offsetting) and lobbying by/negotiation with impacted groups (Denmark, Estonia, Ireland, Sweden, Slovenia). In other cases there has been somewhat limited participation by citizens' groups (Portugal) or a lack of consultation processes (Croatia). Key experts played an important role in promoting and designing several of the instruments (e.g. German RB-AEM, Denmark, Spain, Slovenia, Portugal, Ireland, Italy). In some cases, civil society plays an important implementation role (e.g. Spain, Germany).

Figure E6 Examples of civil society engagement with biodiversity and land use & management instruments



Key: Text in black are examples from the study cases; text in blue examples shared at the workshops

Several lessons can be drawn from the case studies related to biodiversity and land use, including: the potential for well-designed instruments to encourage behaviour change that leads to environmental benefits; the contribution that revenue earmarking can make to an instrument's success; the benefits of engaging key stakeholders in instrument design; the potential for compensatory measures to offset impacts on certain groups and gather support for an instrument; the importance of communicating an instrument's objectives; the need for proper monitoring and enforcement of an instrument; and the contribution that scientific research can make towards ensuring the effectiveness and credibility of an instrument.

7 KEY DESIGN ISSUES AND INSIGHTS FROM BEST PRACTICE

Based on country experiences with the use of economic instruments to address pollution and natural resource use, some key lessons learned from the design and implementation of these instruments and best practices include the following:

Prior to the introduction of an economic instrument, it is very important to define precise objectives and to carefully tailor the design of the instrument in line with this. **Clear objectives linked to specific environmental goals can increase the acceptability of economic instruments and contribute to their success.** For example, the Belgian Environmental Charge and Irish plastic bag levy were both accompanied by successful communication campaigns which made the environmental link clear.

The **tax rate applied and adopting a phased, predictable approach to future change** has a strong impact on the effectiveness of an economic instrument and its ability to stimulate behaviour change. Successful approaches include adopting a low initial tax rate with predictable increases (as with the UK landfill tax) or a high initial rate to give a strong behaviour signal (as with the Swedish NO_x fee which was made possible by a connected reimbursement mechanism which helped increase its acceptability).

The **scope of the tax base, where/on whom it is applied and how it is calculated** can influence the effectiveness of the instrument, its ability to achieve the desired behaviour change and its acceptability. For example, including health and environmental impact considerations in the calculation of the Danish pesticide tax is expected to enhance its effectiveness. By increasing the price of recreational and commercial salmon fishing licenses, the licencing scheme for salmon fishing in Ireland ensured a fair distribution of the conservation burden between stakeholders which helped increase support.

Managing administration costs can help convince affected economic operators that an instrument will not be unduly burdensome (as with the plastic bag levy in Ireland for which revenue collection and reporting is easily integrated in retailers Value Added Tax (VAT) collection systems).

Other design features can also incentivise behaviour change, for example:

- A **reimbursement of revenues** to affected groups (as with the Swedish NO_x fee and SO₂ taxes whose revenues are reimbursed to more energy-efficient and lower-emission plants respectively), **applying exemptions or reduced charges** for certain activities (e.g. reduced air pollution fees applied to businesses in the Czech Republic with emissions below BAT concentrations and lower base values for residual water use in Portugal).
- Some instruments influence behaviour by **making environmentally harmful activities more expensive** (e.g. an increase in the Lithuanian environmental pollution tax on batteries encouraged wider adoption of producer responsibility measures to avoid paying the tax and under the Benelux PAYT schemes, households tend to generate less waste after the introduction of fees).
- Some instruments **influence behaviour by increasing awareness of the benefits of certain activities** (e.g. the result-based agri-environment measure in Baden-Württemberg, Germany increased farmer's knowledge of the impact of their farming practices on grassland biodiversity and on the importance of conserving grassland biodiversity as well as helping to raise public awareness on the importance of species-rich grassland and the role of farmers in its conservation).
- Specific **design features can also stimulate innovation and investment.** For example, the water pollution levy in the Netherlands stimulated investment in innovation in water and waste water treatment plants as companies sought to reduce their levy payments by cutting emissions. Similarly, the Swedish NO_x fee

stimulated innovations within regulated plants through the refund system and a requirement to install monitoring equipment.

Introducing economic instruments as **part of a wider package of measures** can provide a window of opportunity for their establishment and ensure coherence with other policies (e.g. the Danish pesticide tax and revised Estonian mineral resource extraction charge formed part of wider green tax reform efforts). The policy mix/package can also influence the effectiveness of economic instruments, complementing the incentive role played by taxes. For example, the Austrian landfill tax was part of a successful package of measures which included a ban on the landfilling of waste with a total organic carbon content of over 5% and an incineration tax. In Finland, synergies between the packaging tax and deposit refund system has been important in encouraging high rates of use of the deposit system.

Clear communication is critical to the success of an economic instrument and can help increase acceptance. Some examples of good approaches to communication among the cases include transparent communication on the Estonian hunting and fishing fees which enabled the public to understand why sustainable use of natural resources is important; the successful publicity campaign to launch the plastic bag levy in Ireland and the communication campaign and industry voluntary agreement which preceded the introduction of an environmental charge on single-use plastic bags, plastic film, aluminium foil and disposable plastic cutlery in Belgium.

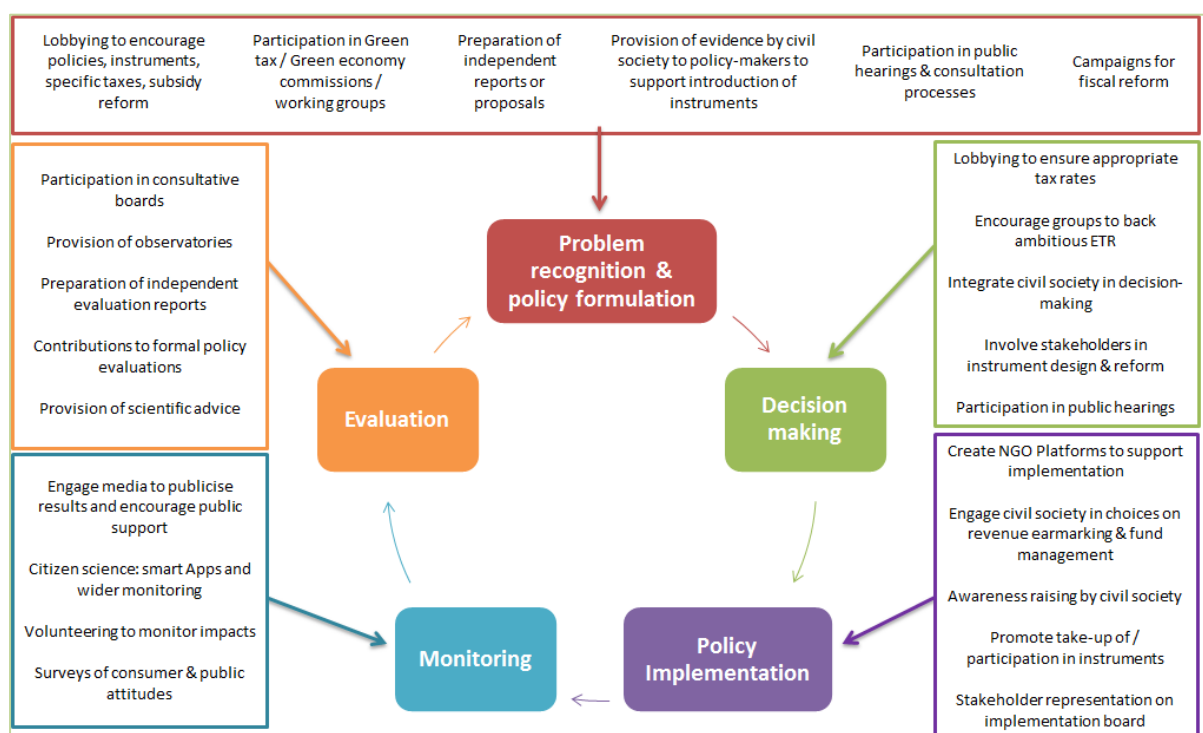
How revenues from economic instruments are used has an important influence on the impact and effectiveness of the instrument, its political and public acceptability, its potential to mitigate adverse impacts and overcome obstacles. Revenues can be used to reduce opposition to the introduction an instrument and increase acceptability for example by helping those affected, especially early adopters, innovators and vulnerable groups (e.g. revenues from the UK landfill tax are used to offset a reduction in employers' social security contributions, revenues from the Danish pesticide tax are recycled back to the agricultural sector and revenues from the Swedish NOx fee are repaid to power plants based on emissions). The earmarking of revenues for environmental purposes can increase acceptance of the instrument and enhance its effectiveness, as illustrated by the Romanian packaging charge (revenues are paid into an Environmental Fund), Polish wastewater fee (revenues are allocated to National (and Regional) Funds of Environmental Protection & Water Management) and Bulgarian abstraction charges (which co-finances investments in the water sector).

Finally, **regular monitoring and evaluation** of the impact of instruments (including unintended impacts) and subsequent revisions are critical to ensure their continued effectiveness. A number of countries have revised economic instruments based on the results of evaluation processes and/or in recognition of the ineffectiveness of the current instrument design, helping to improve the effectiveness of the instruments and its acceptability (e.g. air pollution fees in the Czech Republic were revised in 2012 to introduce higher fees and annual increases, after recognition that they were ineffective).

8 ROLE AND IMPORTANCE OF CIVIL SOCIETY ENGAGEMENT

The case studies and workshops highlighted the key role a range of civil society organisations play in relation to economic instruments to address pollution and natural resource use. Depending on the type of instrument and the environmental theme addressed, this may include: NGOs; industry and business (e.g. waste management, water agencies, producers and manufacturers, trade associations, agricultural bodies, hunters and fishers); political parties; academics, individual and scientific experts; consumers; landowners; and the public. These groups have had varying levels of engagement with and influence over the design, introduction and implementation of economic instruments in the EU-28 (see Figure E6).

Figure E7 Examples of civil society engagement throughout the policy cycle



Source: Case studies and Workshops

In the **problem recognition and policy formulation stage**, civil society can play an important role in helping to make a **case for the introduction of economic instruments by identifying the need for (further) action**. Indeed, experience to date suggests that civil society engagement has largely focused on this stage in the policy cycle through formal consultations, informal discussions and lobbying. For example, the Hungarian NGO Clean Air Action Group kick-started discussions on an air pollution charge that was later adopted. Public and NGO pressure led to the introduction of the Austrian landfill tax, whilst academics, scientists and NGOs provided inspiration for ecological fiscal transfers in Portugal and biodiversity offsetting schemes in Germany.

In the **decision-making phase**, civil society can **shape the design of economic instruments through engagement in stakeholder consultation processes and help increase their acceptance**. For example, the salmon fishing licence in Ireland was designed following meetings with 46 different agencies, organisations and individual stakeholders, leading to a perceived fair distribution of burdens amongst recreational and commercial fishers. Formal consultations on Swedish air pollution taxes, the Irish plastic bag levy and the Slovenian Forest Act helped ensure each instrument's acceptability among affected actors and enhance its effectiveness.

The case studies demonstrate that civil society can also **support the implementation of economic instruments**, although experience has been limited to date. In some cases, civil society organisations are involved in the management of instruments (e.g. the Finnish DRS and the Selvans programme in Spain), consulted on changes in fees (e.g. salmon fishing licence in Ireland and Estonian fishing rates) and involved in decisions on the distribution of revenues from instruments (e.g. UK aggregates levy). Civil society can also play an important role in raising awareness on economic instruments (e.g. civil society initiatives motivate farmers and spread awareness on the importance of species-rich grassland in Baden Württemberg).

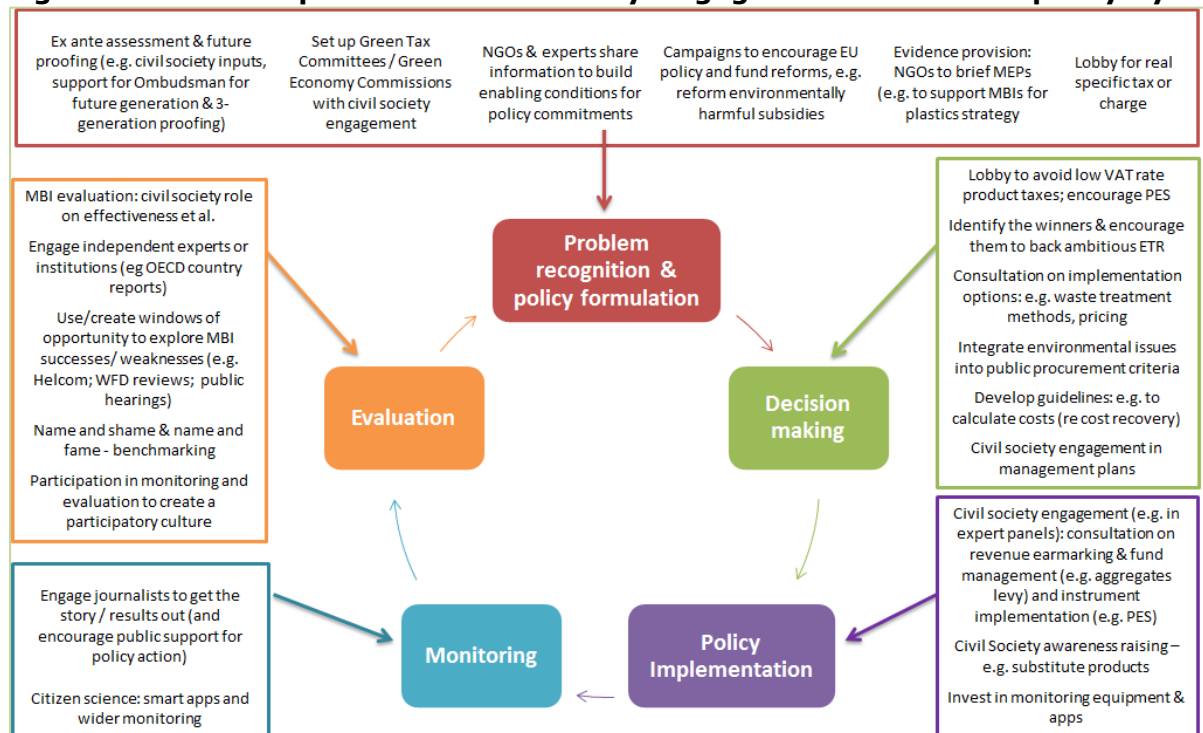
There are also a limited number of examples of civil society being involved at the **policy monitoring phase** such as the involvement of industry and other organisations in monitoring and reporting on air pollutant emissions (e.g. in Sweden and Slovakia), monitoring by volunteers (e.g. result-based measures in Germany, voluntary beach clean-ups related to marine litter in Ireland) and NGOs (e.g. in monitoring plastic on beaches in the Netherlands).

Finally, civil society organisations can usefully be engaged at the **policy evaluation stage** to gather evidence on the impacts of instruments which can support an evidence-based revision of the instrument as necessary. For example, stakeholder inputs supported the evaluation and revision of the UK landfill tax, a consultation board of environmental NGOs was responsible for assessing the effectiveness of the Latvian packaging tax, academics were closely engaged in the evaluation and revision of Czech air pollution fees and independent researchers were involved in the evaluation of Portuguese EFTs and Slovenian subsidies to private forests.

Opportunities for further civil society engagement

The cases examined indicate that to date, a core contribution of civil society organisations, notably NGOs, has been to focus mainly on the policy formulation stage in particular to show that there is an environmental (or social) problem so that it receives policy attention and makes its way on to the policy agenda. While this is still expected to be a fruitful area of focus in the future, with further contributions to the evidence base and engagement in consultation processes, institutions and lobbying campaigns, workshop participants felt that civil society organisations could also play a more significant role in other steps of the policy cycle (see Figure E7).

Figure E8 Future options for civil society engagement across the policy cycle



Source: Case studies and Workshops

Potential areas for further civil society engagement include a more active role in the **decision-making phase** depending on the issue under discussion and the type of civil society organisation involved (i.e. taking part in the design of instrument management, supporting and disseminating guidance); **policy implementation phase** (i.e. participate in expert groups, contribute to consultations on earmarking of revenues, awareness raising, encouraging good practice); **monitoring** (i.e. in situ monitoring of the impacts of instruments, making use of new technologies such as smartphone apps, contribute to the evidence base through citizen science); and **evaluation** (e.g. encourage independent analysis, publish own reports using benchmarking, 'name and fame' or 'name and shame' approaches).

9 THE WAY FORWARD

It is increasingly clear that correcting economic signals will be a core part of the solution to addressing multiple sustainability challenges from resource scarcity, water scarcity and air pollution to biodiversity loss and marine litter among others. MBIs, including environmental taxes and budgetary reforms will play a key role in this regard by helping to shift the behaviour of businesses and citizens towards a more sustainable path. They also generate public revenues which can be used to support various strategic priorities, including environmental objectives. MBIs can therefore help to achieve the goals and targets of legislation, and can also prove beneficial in promoting progress on wider environmental, social and economic objectives even where there is currently no legislation in place.

This study has highlighted a range of experiences with MBIs in different environmental areas among the 28 EU Member States. These experiences provide insights on best practices in the **design of such instruments** and the **role of civil society stakeholders in the policy-making processes**. Civil society organisations have undoubtedly been effective on many occasions at **making the case for environmental tax reform**, but have often missed opportunities to help at other stages of the policy cycle, in particular with implementation.

There is much to learn from these experiences to date – and **an accelerated peer-to-peer, Member State to Member State, exchange of best practices could be a promising way forward**. This, together with potential new coalitions of like-minded countries to take forward new pilot actions on environmental fiscal reform, could be valuable complements to (soft) harmonisation approaches already being adopted. National policy- and decision-makers in the EU Member States should arguably engage more with civil society to use its expertise to promote change with wide-ranging citizen support. Governments are public servants, there for public interest, and civil society have their fingers on the public pulse and provide a voice to the public. There should therefore be a **natural cooperation to meet common objectives** – access to a clean environment and safeguarding resources for both this and future generations. Collaborating to get signals in the economy to support these objectives is a question of good governance, and **there remains scope for further efforts in this area with potential economic, budgetary, social and environmental benefits**.

There is a need to better understand current windows of opportunity to take this agenda forward, what other opportunities could be created and how civil society can input into them. Opportunities include the motivation provided by international actions such as the Paris Agreement, biodiversity agreements and the UN Sustainable Development Goals, as well as ongoing discussions on future EU policies, including those related to circular and green economy, agriculture policy, and environmental fiscal reform more generally. Furthermore, there is a **need for more active engagement of civil society throughout the policy cycle to support the transition towards appropriate resource, product and pollution pricing needed for a transition to a green and circular economy in the EU**.

It is intended that the results of this study will feed into two work streams of the European Commission. Firstly, they will be used to make suggestions on **incorporating environmental tax reforms in country-specific recommendations through the Greening the European Semester process**. Secondly, they will feed into the **two-yearly Environmental Implementation Review**, to help Member States implement EU environmental policy. In addition, the case studies and wider study findings should make a valuable contribution to **supporting Member State national, regional and local governments** on the one hand, **and civil society organisations** on the other, **in promoting market-based instruments for environmental improvements and fiscal reform**.



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