Toolkit to identify and reform incentives harmful to biodiversity

S. Withana, P. ten Brink, A. Illes, E. Watkins, D. Russi
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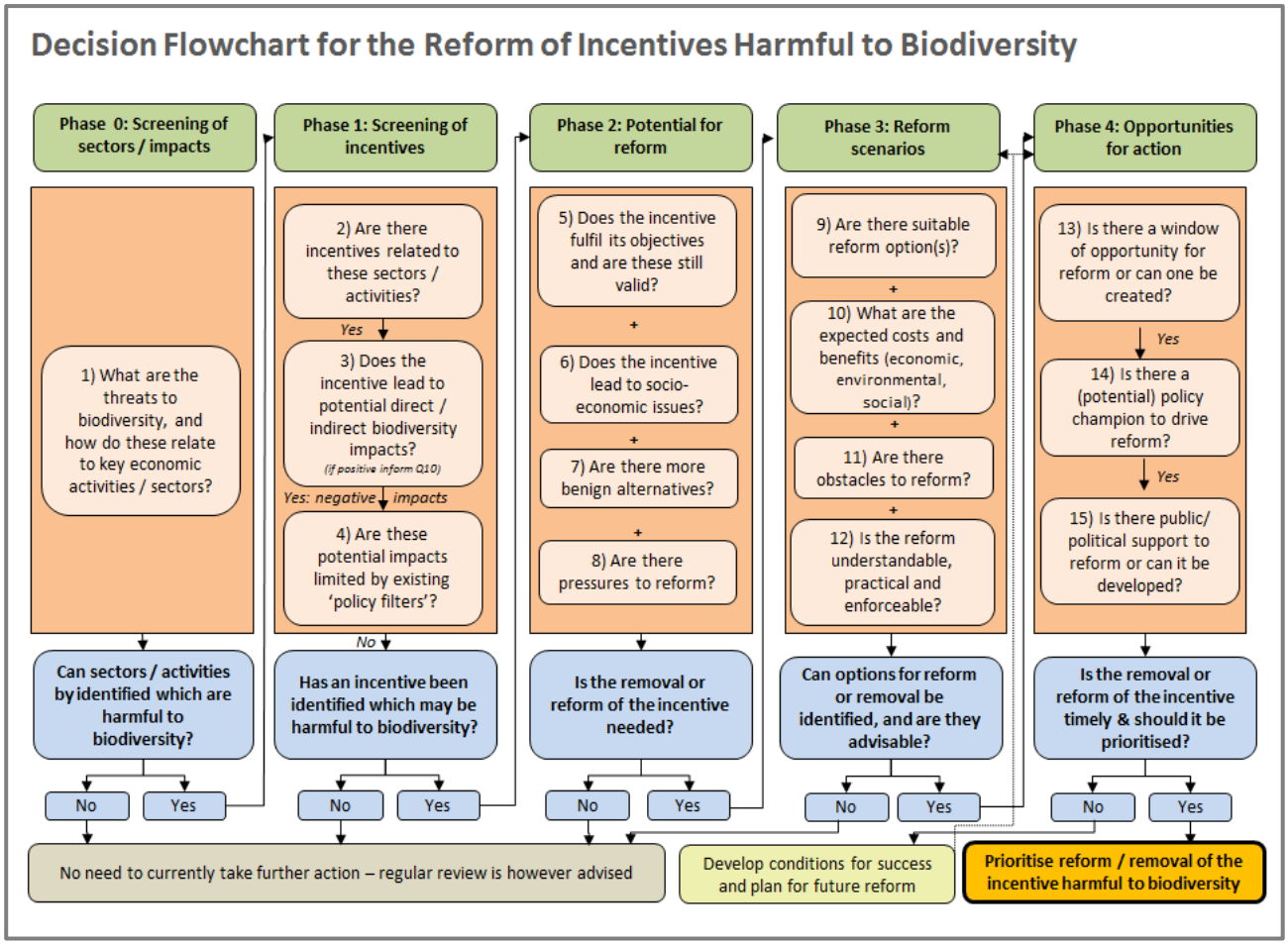

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Contents

List of Tables

List of Boxes

Introduction

In 2010, Parties to the Convention on Biological Diversity (CBD) adopted The Strategic Plan for Biodiversity 2011 – 2020 and the twenty Aichi Biodiversity Targets. Target 3 relates to the elimination, phasing-out or reform of incentives, including subsidies, harmful to biodiversity and the development and application of positive incentives for conservation and sustainable use of biodiversity by 2020 (CBD, 2010). In 2014, Parties to the CBD adopted a timeline and milestones for implementing Target 3 (UNEP/CBD/COP, 2014). According to this decision, by 2018 countries should finalize policy plans that: identify harmful incentives; provide a prioritized list of measures leading to their eventual elimination, phase-out, or reform; provide a prioritized list of measures leading to the introduction/strengthening of positive incentives and set out associated timelines and milestones for implementation.

The adoption of these commitments continues a stream of work on incentive measures and biodiversity by the CBD and other actors over several years. It complements parallel discussions on the wider issue of reforming environmentally harmful subsidies (EHS) where a number of commitments to reform have been adopted. For example, at the international level APEC and the G20 have adopted commitments on inefficient fossil fuel subsidies and the Rio+20 Outcome Document reiterated commitments to address trade distorting subsidies and harmful subsidies in the fisheries and fossil fuels sector (Oosterhuis and ten Brink (eds.), 2014). The Sustainable Development Goals (SDGs) adopted in 2015 includes targets to eliminate subsidies which contribute to overcapacity, overfishing, illegal, unreported and unregulated fishing (SDG14.6), rationalise inefficient fossil-fuel subsidies that encourage wasteful consumption (SDG12c), mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems (SDG15a) and for sustainable forest management (SDG15b) among others.

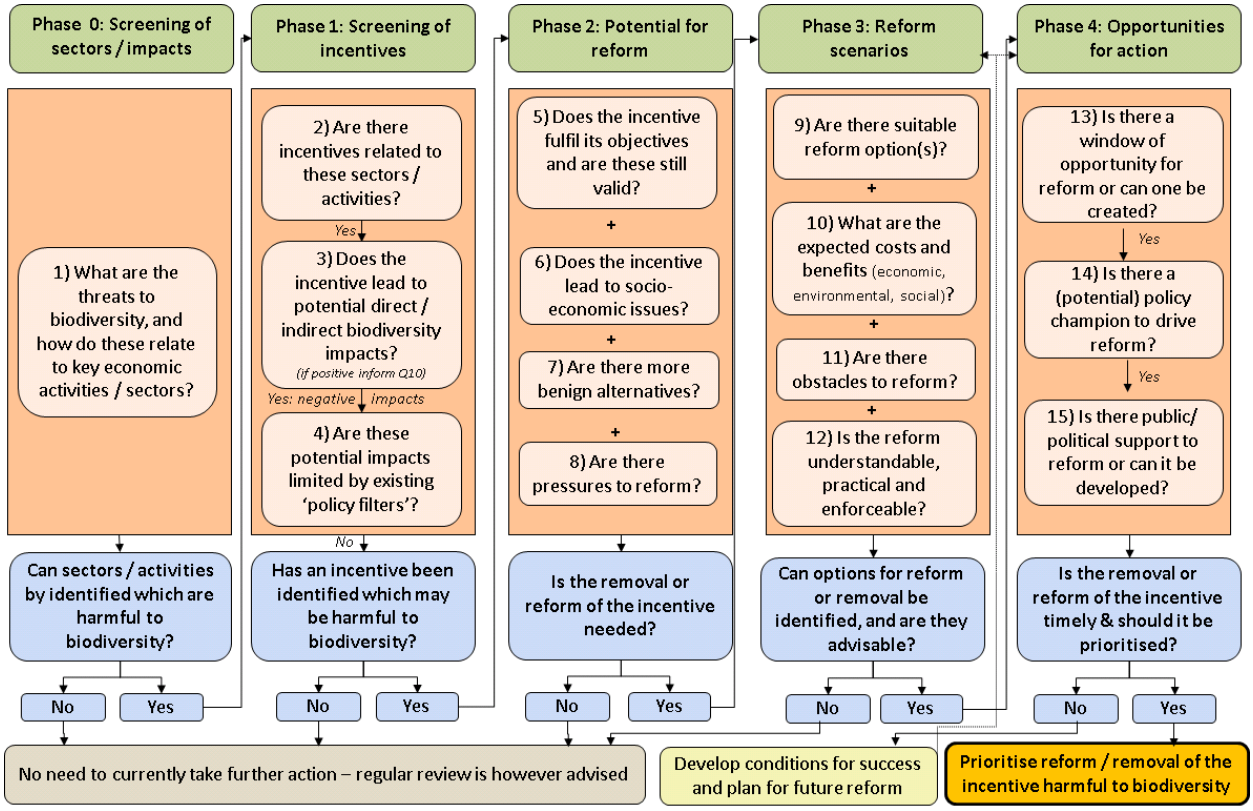
A first step in meeting the commitments under Aichi Biodiversity Target 3 is to identify existing incentives which are harmful to biodiversity. Once such incentives have been identified there is a need to prioritise those which are particularly detrimental and thus merit elimination, phase-out, or reform. To support this process, the Institute for European Environmental Policy (IEEP) has developed a subsidy reform screening toolkit which can help identify perverse incentives, understand potential options for their reform and prioritize or focus reform efforts. This toolkit has been piloted in the UK by the Department for Environment, Food and Rural Affairs (Defra) (ten Brink et al., 2012). It builds on international tools for the identification and reform of EHS including the OECD checklist (OECD, 2005) and integrated assessment framework (OECD, 2007); work on subsidies by the CBD Secretariat et al. in the context of The Economics of Ecosystems and Biodiversity (TEEB) (Lehmann et al., 2011), and studies on EHS by IEEP et al. for the European Commission (Valsecchi et al., 2009 and Withana et al., 2012).

This paper develops the subsidy reform screening toolkit to improve the integration of natural capital (NC) and ecosystem services (ES). It builds in new insights on ecosystem services, synergies and trade-offs linked to incentive measures and wider benefits of reform. The toolkit aims to support countries in the process of identifying incentives harmful to biodiversity and inform the development of policy plans for the elimination, phase-out or reform of such incentives. It thus seeks to provide a useful and practical guide to policy-makers as they consider actions to respond to their commitments to implement Aichi Biodiversity Target 3 by 2020.

The toolkit and how to use it

The subsidy reform toolkit aims to provide a clear, accessible means to identify and assess incentives, improve understanding of potential reform options and help prioritise reform efforts. The toolkit is structured around a number of phases as illustrated in Figure 1. Each phase has a number of steps. Guidance for each step is provided and practical examples integrated throughout. A traffic light system helps visualize the outcome of each phase. In phases 0-2, the traffic lights focus on the harmfulness of the incentive (i.e. a red light suggests 'stop and consider reform', an orange light that there are issues worth checking, and a green light that there is no major cause for concern). In phases 3-4, the traffic lights focus on reform options (i.e. a green light means 'go ahead with reform'; an orange light suggests evaluating pros and cons of options; and a red light means 'wait for a better moment').

Figure 1: Subsidy reform toolkit



Source: Adapted from ten Brink et al. (2012) which builds on Valsecchi et al. (2009), as well as Lehmann et al. (2011).

The toolkit seeks to provide a broad framework applicable to a range of subsidies and incentives. It can be tailored for more sector-specific assessments and to reflect country circumstances. The level and depth of the assessment will depend on financial and human resources available. Given that the incentives and their reform are likely to affect a number of sectors, areas and stakeholders, it is important that the process is open, transparent and participatory adopting a whole-of-government' approach (OECD, 2007) and engaging relevant stakeholders (e.g., industry, business associations, trade unions, NGOs).

Phase 0: Scoping sectors and activities

This Phase aims to identify whether there any particular activities or sectors that directly or indirectly have an effect on NC and ES. This scoping exercise can help identify where there are risks or potential problems and allow for a focused assessment on these in Phase 1. Note that one can start directly with Phase 1 if the sectors and activities harmful to NC and ES are already known.

Step 1: Are there any particular activities or sectors that directly or indirectly affect NC & ES?

The first step is to identify whether there are any activities or sectors (e.g., agriculture, construction, energy production and distribution, fisheries, forestry, transport) that affect the priority environmental issue (e.g., natural capital and ecosystem services). Once the damage, pressure or threat is detected, it is possible to explore whether the sector or activity causing it is supported by a specific subsidy or incentive (see Step 2 in Phase 1).

This step should be based on existing evidence and can draw on various sources such as national indicator reports, environmental assessments and in due course environmental accounts. Where biodiversity plays a key role, one can make use of The Economics of Ecosystems and Biodiversity (TEEB) (www.teebweb.org), national assessments (e.g., as per the UK National Ecosystem Assessment [NEA], 2011), and work around national biodiversity strategies and action plans (NBSAPs). An absence of evidence should not be taken as an indication that there is no impact on the environment. If evidence is not identified, regular review is recommended to reflect changes to the knowledge base, and if considered necessary undertake further research.

Box 1: Identifying impacts of key sectors and activities on NC & ES

Fisheries sector – Certain fisheries subsidies such as capacity-enhancing subsidies (e.g. subsidies for fleet expansion and modernisation, tax preferences for intermediate inputs such as fuel which reduce vessel operating costs), and the type of fisheries management regime in place can encourage increased fishing activities which can lead to over-exploitation of fish stocks, damage to species (e.g. from bycatch of non-target and juvenile fish and marine mammals), destruction of aquatic ecosystems (e.g. from bottom trawling), reducing future fish production and affecting ecosystem services.

Agriculture sector – Agricultural activities which stimulate intensification and/or expand production can lead to a loss of non-target species (e.g. from increased use of pesticides), loss of biodiversity-rich extensive farmlands (e.g. due to increased fertiliser use or increased grazing), destruction of important habitats from land-use change, hydrological changes to habitats from drainage or irrigation (e.g. leading to wetland loss and reductions in groundwater levels); eutrophication of freshwater, marine and terrestrial ecosystems (e.g. from fertilizers and nutrient rich run-off); soil degradation and erosion etc.

Water sector – Below-cost pricing of water provision (i.e. charging rates that do not cover operating and management costs) and preferential treatment for certain user groups (e.g. lower rates for irrigation) leads to over-use and wastage of often limited water resources. This can lead to falling water tables, reducing flows in some rivers, eutrophication, potential damage to the aquifer itself through salt water intrusion, increased pollution from pesticides etc.

Energy sector - The production and use of fossil fuel energy leads to increased GHG emissions and other pollutants (sulphur, particulate emissions), as well as wider environmental impacts (e.g. groundwater contamination, land degradation, methane emissions from oil and gas operations, oil spills). The development and use of renewable energy can have positive (e.g. mitigating the impacts of climate change

which have been shown to have detrimental impacts on species, habitats and entire ecosystems) and negative (e.g. loss of wildlife habitat from hydroelectric dams, hazardous components used in solar cells, location of wind farms and utility-scale solar power plants, land-use change from large-scale biofuel expansion) impacts on NC and ES.

Transport sector - Transport-related emissions (global GHG emissions, local air pollution and noise emissions) have direct and indirect impacts on ecosystems and biodiversity. Transport-related infrastructure (e.g. roads, railways) leads to habitat destruction, creates physical barriers to wildlife movement, fragments habitats into smaller areas and contributes to urban sprawl.

Urban sprawl – The expansion of urban areas and associated sealing of large areas of land with artificial, impervious surfaces such as roads and buildings has significant direct and indirect impacts on ecosystems and natural capital. For example driving biodiversity loss, disrupting soil services, increasing soil pollution and reducing the carbon storage capacity of soil, affecting groundwater reservoirs, increasing reliance on private motor vehicles for transport with corresponding negative impacts (see above), increasing risks of flooding, leading to fragmentation of habitats, and the overexploitation of natural resources.

Sources: ten Brink et al. 2012 and ten Brink et al., 2014

Synthesis of Phase 0

Table 1 can be used to summarize the assessment in this phase. Only one option should be chosen (the others should be deleted as applicable). Use of a red light indicates there is a threat to the environment that needs attention that should be explored further in the next stage of the toolkit.

Table 1: Synthesis of Phase 0: Screening of sectors and activities

(1) Can sectors/activities be identified that affect NC & ES?		No
		Yes, although relatively small affects
		Yes, significant direct/indirect affects that merit attention

Phase 1: Screening subsidies and incentives

The aim of Phase 1 is to identify subsidies and incentives that are likely to have significant impacts on NC & ES and should be further assessed. This screening process should include consideration of explicit and implicit subsidies as well as positive subsidies. This phase should be based on readily available, largely qualitative information, and is not intended to be time-consuming.

Step 2: Are there incentives related to these sectors/activities?

In this step, the analyst will need to establish whether there is a subsidy or incentive in place in the identified sectors or activities. In practice, whether or not a particular policy, measure or instrument should be considered a subsidy is not always self-evident (recall discussions in Chapter 3). The counterfactual (the baseline or the 'world-without-subsidy') is a crucial element in this respect. The choice of the counterfactual includes a number of elements such as considerations of distributional equity and interpretations of policy principles such as the 'polluter pays principle'. It is impossible to provide 'objective' guidance on this choice, however transparency can be postulated as a basic requirement, i.e. the analyst should explicitly describe the counterfactual scenario used. 'Objective' benchmarks, such as EU state aid guidelines and standard tax rates may be helpful in defining counterfactuals. Measures that have been taken to mitigate or compensate certain unwanted effects of the subsidy will probably not be part of the counterfactual.

Once a subsidy has been identified, some of its key characteristics should be described in order to help clarify its design and understand its impacts, scale and potential for reform. Information on the following should be collected:

- What is the size of the subsidy (or incentive)?
- What is the point of impact of the subsidy – for example, beneficiary?
- What is the 'conditionality' for the subsidy – that is, the criteria for eligibility to receive the subsidy?
- What is the duration of the subsidy?
- Does the subsidy provide for long-term structural impacts?

Box 2: Definitions of subsidies and incentives in the context of NC & ES

Definitions of subsidies vary widely depending on the context. One definition that is used in the policy context defines subsidies as:

'A result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs' (OECD, 2005)

This definition considers several government support measures as subsidies, however it does not include implicit subsidies that result from non-internalisation of externalities or a lack of full cost pricing. Pieters (1997) proposes a broader definition that includes 'deviations from full costing' although these may sometimes be difficult to measure. This includes cases where the polluter does not pay for the costs of pollution as well as cases where users do not pay for the cost of provision of a good or service. While broad definitions are operationally difficult (due to data limitations, methodological and conceptual challenges to quantifying externalities etc.), it is important to recognise that such implicit subsidies exist and can be quite significant (Withana et al., 2014).

In the context of the SDGs, subsidy-related targets include SDG14.6 on fisheries subsidies which contribute to overcapacity, overfishing, illegal, unreported and unregulated fishing and SDG12c on inefficient fossil-fuel subsidies that encourage wasteful consumption. With the exception of a reference to provide incentives to developing countries to mobilize resources to advance sustainable forest management (SDG15b), there is no further specific reference to subsidies or incentives relating to NC and ES in the SDGs.

Within the CBD context (CBD decision X/44) the terminology of 'incentives, including subsidies harmful to biodiversity' is used. The use of the term 'incentives' avoids confusion that arises when people use subsidies to mean different things and encompasses a wider set of economic subsidies including incentives harmful to biodiversity (e.g. subsidies with harmful effects on biodiversity and ecosystems, laws or policies governing resource use, land and tenure systems, environmental regulations etc.) and positive incentive measures that promote the conservation and sustainable use of biodiversity (e.g. direct approaches such as long-term retirement/set-aside schemes, conservation leases, covenants or easements, payments for ecosystem services etc. and indirect approaches such as market promotion of biodiversity-related goods and services, eco-labelling and certification schemes, community-based natural resource management programmes, etc.) (CBD, 2011). In this toolkit, the terms 'incentives' and 'subsides' are used interchangeably, building on the wider literature and well-recognised terminology related to environmentally harmful subsidies (EHS).

The size of such subsidies and incentives are significant. For example:

- In 50 OECD countries and emerging economies, between 2013 and 2015 governments spent USD 585 billion subsidising agricultural producers every year, of which 68 per cent was considered distorting to production decisions, markets and trade (OECD, 2016).
- In the fisheries sector, global subsidies are estimated to be USD 35 billion annually, of which USD20 billion are capacity-enhancing subsidies (Sumalia et al., 2016).
- Globally, inefficient water subsidies are estimated to be USD 456 billion in 2012 (IMF, 2015).
- Global estimates of fossil fuel subsidies for consumption range from USD 493 billion in 2014 (IEA, 2015) to USD 5.3 trillion in 2015 (IMF, 2015a) when negative social and environmental externalities are taken into account.

Step 3: Does the incentive lead to (potential) direct or indirect impacts on NC & ES?

This is a key step of the analysis. In order to understand whether an incentive should be phased out or reformed on environmental grounds, it is crucial to determine the significance of the impacts it exerts on the environment (see **Box 3**). The nature and extent of the direct/indirect impacts of the subsidy should be described on the basis of qualitative and where possible quantitative information available. Where these impacts are negative, the analyst should proceed to Question 4 below. Where the impacts of the subsidy are assessed to be positive (e.g., where the subsidy supports energy efficiency improvements in households or the development of renewable energy sources), the analyst should proceed to Questions 7 and 9 of the toolkit.

Box 3: Positive and negative impacts of incentives on NC & ES

In **Flanders, Belgium**, subsidies and incentives such as the provision of free transport infrastructure, transport taxes which do not reflect externalities, fiscally deductible transport costs within the framework of personal income taxes and corporate income taxes, favourable company car taxation etc., encourage the use of private motor vehicles with corresponding negative impacts on GHG emissions, local air pollution, impacts of road infrastructure, congestion, land sealing and urban sprawl (Franckx et al., 2013).

In **Iceland**, changes in catches and export prices have historically been a leading source of fluctuation in economic growth due to the importance of fisheries (Eythórsson, 2003; Newman and Mazza, 2013; Central Bank of Iceland, 2014). In the mid-1980s, it became clear that open access to economically attractive fish stocks was leading to over-investment in fishing capacity, exploitation and stock decline. This led to the development of a system of Individual Transferable Quotas (ITQs) for fishermen (Pantzar, 2017 forthcoming).

In **Finland,** unlike other energy sources, taxes applied on peat for heat production do not depend on energy content and CO_2 emissions (Leinonen 2010). In 2016 the tax was set at EUR1.9/MWh, whereas were peat to be taxed similarly to other energy sources, the tax should be around EUR19-20/MWh for heat production and EUR13-14/MWh for combined heat and electricity production (Finnish Government 2014). This low tax rate encourages the use of peat for heat production resulting in high CO_2 emissions and negative impacts on biodiversity and water.

Several European countries (e.g. **Cyprus, Poland, Portugal, Romania, Slovenia and Spain**) apply a lower rate of VAT to pesticides (PAN Europe, 2017), effectively subsidising the use of these products, leading to increased use of pesticides with associated negative impacts on non-target species, habitat destruction, soil contamination, pollution of freshwater, marine and terrestrial ecosystems etc.

Step 4: Are these potential impacts limited by existing 'policy filters'?

Subsidies and incentives do not operate in isolation; rather, they are often provided as part of a wider policy mix aimed at maintaining production or employment levels, for example, or addressing market failures in a sector. Examples of policy filters in relation to fuel tax exemptions include fuel quality standards, technology requirements, efficiency and emission standards for vehicles, and subsidies for public transport. Policy filters relating to irrigation subsidies include subsidization of drip irrigation technologies, provision of finance to modernization projects, and cross-compliance requirements of the EU's Common Agricultural Policy (CAP) (Valsecchi et al., 2009).

It is therefore important to consider whether there are other policies or measures in place that might mitigate (or worsen) the impact of the incentive or subsidy in such a policy mix. The following issues should be explored:

- Are there 'policy filters' that mitigate the environmental effects of the subsidy/incentive?
- What regulatory requirements are in place which create policy filters (e.g., emission limit values, best available techniques (BAT) requirements)?
- What other subsidies/incentives are provided to the sector or activity?
- Does the taxation regime counterbalance the impacts of the subsidy (i.e., act as a type of filter)?

Synthesis of Phase 1

Table 2 can be used to summarize the assessment in this phase. Only one option per question should be chosen. Note that a small subsidy (i.e., orange light under Question 2) can lead to a big impact (as seen with previous subsidies supporting fisheries bottom-trawling). The overall conclusion as to whether a subsidy is harmful to the environment will depend on a combination of factors.

Table 2: Synthesis of Phase 1: Screening of subsidies and incentives

(2) Is there a subsidy/perverse incentive?		No
		Yes, although relatively small
		Yes, substantial subsidy in place
(3) Does the incentive lead to potential direct/indirect environmental impacts?		No or very limited impact (if a positive impact proceed to Questions 7 and 9)
		Some potential negative impacts
		Significant potential negative impacts
(4) Do existing 'policy filters' avoid/mitigate its impacts?		Yes, so overall impact is limited
		Some mitigation, but not sufficient to offset the impact(s) of the subsidy
		None in place or ineffective
Therefore, is there an incentive/subsidy that is harmful to the environment?		No
		Yes, although effect on the environment is limited
		Yes

If the conclusion is that there is an incentive/subsidy that is harmful to the environment, then this can be added to the inventory of EHS. Positive subsidies identified in Question 3 are also important as insights into their design and implementation can help inform the development of more benign solutions (Question 7) and reform options (Question 9).

Phase 2: Assessing potential for reform

The aim of Phase 2 is to better understand whether a subsidy needs reform and how this can be justified. This then creates the basis for identifying and assessing reform options in Phase 3.

Step 5: Does the incentive fulfil its objectives and are they still valid?

It is important to understand the original objectives of an incentive (economic, environmental, and/or social), whether they have been achieved or not and whether they are still valid (see **Box 4**). The timescale of the subsidy can be an important aspect of an objective. Many subsidies have no time limit, thus there are subsidies/incentives that continue to be provided even though the economic or political target has been achieved or is no longer relevant. Issues to explore in this step include:

- What are the objectives of the subsidy?
- Who are the intended recipients of the subsidy (i.e., input producer, intermediate consumer, finished product consumer)?
- Are the objectives still justified?
- Has the subsidy been in place for a long time and/or does it lack a built-in review process?

Box 4: Ineffective incentives and unintended effects – Some examples from practice

In **France**, the use of nitrogen-rich fertilizers in agriculture leads to eutrophication, the development of toxic bacteria and phytoplankton, and green algae invasion along parts of the French coast, threatening animal and plant diversity in aquatic habitats. This pollution also has significant socio-economic costs - tourism losses and cleaning costs to coastal municipalities are estimated to be in the range of EUR100-150 million a year, while costs to households are estimated to be in the range of EUR 740-1160 million per year. As the costs of addressing adverse impacts from the high concentration of nitrates (NO3) in water is borne by households and local authorities, this constitutes an implicit subsidy to farmers whose activities are the source of the pollution (Withana et al., 2012).

In **Spain**, subsidies for scrapping fishing vessels aim to provide fishers a financial incentive to leave the fishery so as to create a greater balance between fishing capacity and fishing opportunities, thereby increasing sustainability, efficiency and profitability. However in practice, the scheme has not been properly targeted so 'deadweight' vessels are scrapped when they are not active. The scheme may also contribute to capacity problems by reducing investment risk and injecting funds into economically weak fishing companies. Furthermore, reallocation of fishing rights of decommissioned vessels means that quotas are concentrated in fewer hands and are still available so reduced capacity does not necessarily lead to lower fish landings (Withana et al., 2012).

In **Fiji**, a fuel concession is provided to the fishing industry to reduce operating costs and encourage participation in this important economic sector. Local fishing vessels receive a subsidy in the form of an exemption from the FJD 0.02 (EUR 0.009) per litre bunker fee and a duty free fuel concession, subject to eligibility criteria and approval from the Minister for Finance (Fiji Revenue and Customs Authority, 2016). This fuel subsidy may keep operational costs artificially low and could contribute to excessive fishing pressure on an already overfished reef (Gillett et al., 2014).

Step 6: Does the incentive have unintended social and/or economic impacts?

It is important to highlight the economic and social relevance of the subsidy and its potential socioeconomic trade-offs (see Box 4). Pulling out these elements will help enhance the assessment and the success of potential future reform processes. Issues to be explored in this step include:

- What are the unintended economic impacts of the subsidy?
- What are the unintended social impacts of the subsidy?
- Who are the winners and who are the losers?

Step 7: Are there more benign and/or effective alternatives to the incentive?

This step aims to assess whether there are more environmentally benign and/or effective alternatives available than those which are currently subsidised/incentivised, and whether these are hindered by the existence of the incentive. This step is also valid for positive subsidies or incentives identified in Step 3 of the assessment. If technologies, activities and products intended to replace the previously subsidized ones have lower environmental impacts, the removal of the subsidy is likely to bring about environmental benefits. It should be noted that this will usually require some judgement from the analyst (Pieters, 2003). Issues to be explored in this step include:

- Are there alternative technologies, products, services or modes of production that could replace those supported by the existing subsidy/incentive?
- How do the environmental impacts of these alternatives compare with those which are currently subsidized?
- Is the implementation of these alternatives hampered by the existing subsidy/incentive?
- What is the likelihood of these alternatives replacing previously subsidized ones (i.e., are they sufficiently developed, easily available, market ready, affordable)?

Step 8: Are there calls/pressures for the reform or removal of the incentive?

It is important to consider whether the socio-political environment is conducive to supporting successful reform of the subsidy. Stakeholder influence (e.g., a lobby opposing reform) or public calls for reform can affect the acceptability and public understanding of the need for reform. Note that a call for reform by the public (individuals, NGOs, press) can also be an important indicator of the need for reform (e.g., due to environmental harm or social injustice). Issues to be explored in this step include:

- Are there existing calls for the subsidy's reform?
- If so, can the reform be supported and potentially informed by civil society or other stakeholders (e.g., NGOs, trade unions, industry associations)?

Synthesis of Phase 2

Table 3 can be used to summarize the assessment in this phase and identify whether a subsidy/incentive is amenable to reform or removal. Only one option per question should be chosen (the others should be deleted as applicable).

Table 3: Synthesis of Phase 2: Potential need for reform

(5) Does the incentive fulfil its objectives and are these objectives still valid?		No
		Yes, although relatively small
		Yes, substantial subsidy in place
(6) Does the incentive lead to any unintended social and/or economic issue?		No or very limited impact (if a positive impact proceed to Questions 7 and 9)
		Some potential negative impacts
		Significant potential negative impacts
(7) Are there more benign and/or effective alternatives that are hindered by the incentive?		Yes, so overall impact is limited
		Some mitigation, but not sufficient to offset the impact(s) of the subsidy
		None in place or ineffective
(8) Are there pressures for the incentive/subsidy to be reformed or removed?		No
		Yes, although effect on the environment is limited
		Yes
Therefore, should the incentive or subsidy be reformed/removed?		There is no problem and/or no opportunities for improvement (i.e., the incentive fulfils its objectives, offers important social benefits; there are no alternatives and no calls for reform)

		Reform is advisable, although it should be approached with caution (e.g., where there are few alternatives available [immediately] or where there is little pressure for reform)
		There is a significant problem and reform options should be assessed with a view to identifying promising reform initiatives

Where the conclusion is that there is an environmental problem, and that a subsidy/incentive contributes to this problem then it should be included on the EHS inventory shortlist and subject to a review of reform options.

Phase 3: Identifying and assessing reform options

The aim of Phase 3 is to clarify available reform options and their implications (costs and benefits, pros and cons, intended and unintended impacts). Options could include reforming the design of the incentive (i.e., amount, recipients, timeframe, conditionality etc.), adopting alternative measures or instruments, or eliminating the incentive (outright or a phased approach).

This can be seen as a process equivalent to a policy impact assessment. If available resources are insufficient for a full impact assessment, a less detailed and likely more qualitative analysis should be undertaken to compare different options and ensure that the chosen option does not result in greater environmental impacts. Compensation measures should also be considered to mitigate possible detrimental effects on society (e.g., distributional impacts) or the economy (e.g., reduced competitiveness).

Step 9: Are there suitable reform option(s) and what are they?

It is important to understand whether subsidies/incentives (both positive and negative) are the best and most cost-effective instrument to tackle the issue at stake, whether there are preferable alternatives (e.g., regulatory instruments, quotas, taxes etc.) or whether it would be preferable to phase out the subsidy completely. This step should explore the following issues:

- What alternatives exist for meeting the objectives of the subsidy (provided they are still valid)?
- If the objective of the subsidy or incentive is no longer valid, could it be removed?

The number of reform options identified in this step, and their level of detail depends on the resources available for the analysis. A thorough analysis will require the identification of a set of realistic policy options for a detailed impact assessment, while a simpler approach could identify one or two options to provide evidence on the feasibility of reform.

Box 5: Reforming harmful incentives on NC & ES – Some examples from practice

In response to a critical depletion of salmon stocks in **Ireland**, the salmon management regime was significantly revised in 2007. Changes included the closure of Irish mixed stock fisheries and a doubling in the price of existing recreational and commercial salmon fishing licenses with 50% of revenues earmarked to the Salmon Conservation Fund. The licencing scheme helps regulate fishing pressures on salmon stocks while providing an important source of funding for efforts to support the conservation and sustainable management of salmon stocks and their habitats. The licencing regime combined with broader measures for stock management and conservation have delivered some improvements, in particular in terms of the status of salmon habitats (Kettunen, 2017 forthcoming).

New Zealand launched a major reform of its fisheries policy in the late 1980s. Subsidies to the fisheries sector were eliminated and the fisheries management regime fundamentally changed with the introduction of a property rights-based quota management system (QMS) and individual transferable quotas (ITQs) combined with a minimum buy-out of existing rights from fishermen (Withana, 2015). This package of measures helped avoid potential negative social and environmental impacts of the subsidy removal and increased public acceptability of the reform. The reform contributed to more effective management of fish stocks and in some cases a recovery of certain stocks from overexploitation (CBD, 2011), encouraging ITQ owners to participate in the collective management of fisheries resources thus supporting sustainable utilization of fish stocks (OECD, 2011).

In **Indonesia** in the 1980s, subsidies for pesticide sales, spraying and favourable credit packages led to the over-use of pesticides which contributed to significant negative impacts on the environment and human health, a reduction in rice production and USD1.5 billion worth of damage to the rice sector from pest infestations. Fiscal constraints in the late 1980s led the government to reduce support to the sector which

included the removal of pesticide subsidies together with a ban on the import of broad spectrum pesticides in 1986; and the removal of fertilizer subsidies in 1998. The reform was accompanied by a well-funded national programme of Integrated Pest Management (IPM) to help maintain rice production and farm incomes. Following the reform, pesticide applications halved reducing the flow of toxins to the environment and negative impacts on biodiversity and human health. At the same time, rice production grew by three million tons over four years and the subsidy reform led to US$100 million of savings in government revenues (see CBD, 2011)

In **Denmark**, a tax on pesticides has been in place since1982. Despite reforms in 1996 and in 1998, the tax had only a small impact on the use of pesticides (Pedersen et al., 2015). Therefore, the tax was reformed in 2013 to be based on environmental and health impacts of the use of pesticides rather than on the retail price. A new tax was established for each approved pesticide based on: human health risks (exposure of spray operator), environmental load (toxicity to non-target organisms in the environment), and environmental fate (degradation, bioaccumulation, leaching to groundwater) (MoT 2015; Pedersen and Nielsen 2016). This led to a significant increase in the price of some pesticides and a decrease in the price of others. On average the tax level increased, with annual revenues estimated to increase from about DKK 500 million (EUR 67 million) to DKK 650 million (EUR 87 million) (Danish Economic Council 2015).

In **Finland**, the tax applied on the use of peat for energy purposes was kept at a low level during the 1990s (EUR 0.35/MWh) and the 2000s (EUR 1.59/MWh) to support energy sufficiency and jobs. However, peat extraction has a significant impact on biodiversity and water quality, and for this reason the tax was increased to EUR 1.9/MWh in 2012 and EUR 4.9/MWh in 2013 (Statistics Finland 2016). Although the government intended to further increase the tax to EUR 5.9/MWh in 2015, it finally decided to reduce the tax to EUR 1.9/MWh (Finnish Government 2012) to support national energy security and jobs in rural areas.

Box 6: Positive incentives for NC & ES – Some examples from practice

In **Girona province (Catalonia, Spain**), a system of public incentives for mature forest conservation was launched in 2005 aimed at financing stumpage acquisition (i.e. buying tree logging rights of land owners for 25 years). Under the scheme, forest owners receive a subsidy corresponding to the estimated opportunity costs (i.e. lost revenues of the wood that would have been sold without the subsidy). In 2011, the aid was restricted to public forests only. The NGO Acciónatura focused on financing similar incentives for private owners through an online fundraising tool for nature conservation (Gorriz and Prokofieva, 2011).

In **Brazil**, since 1991, 17 out of 26 states have adopted a system of ecological value-added taxes (ICMS Ecológico) which introduce ecological indicators in the distribution of VAT revenues which take into account the share of protected areas in relation to the total municipal area and conservation factors reflecting the level of conservation strictness of the area. This system of ecological fiscal transfers (EFT) in Brazil recognises the high opportunity costs arising from watershed protection and biodiversity conservation that municipalities with vast protected areas face, while at the same time providing an incentive for biodiversity conservation actions by creating greater acceptance of conservation policies. There seems to be a trend of an increase in protected areas created in states where such systems are in place (Ring et al. 2017 and Ring et al. 2011).

Within the EU, **Portugal** has an EFT scheme in place since 2007 when the coverage of Natura 2000 sites and other protected areas was integrated into the existing system of fiscal transfers from the national to the local level. Although a small increase in protected area coverage has been observed since 2007, due to various factors such as the lack of ear-marking of transfers for conservation purposes and simultaneous changes to the wider fiscal transfer system, it is not possible to clearly identify how much of this increase was a result of the introduction of the scheme (Ring et al. 2017).

In **France**, a comprehensive tax relief system linked to biodiversity conservation on Natura 2000 sites has been in place since the mid-2000s. Exemptions are granted on the following taxes: (i) property tax for un-developed property on Natura 2000 sites, (ii) inheritance tax for the transfer (succession or gift) of unbuilt property located on Natura 2000 sites, and (iii) income tax for Natura 2000 site management costs (Illes and Ratliff, 2017). These exemptions are conditional on certain land management practices and are supported by specific contractual tools. While these tools in theory can ensure long-term conservational

effectiveness there is only limited empirical evidence available to date on the conservation effectiveness of the French tax relief system.

In the **US**, the donation of conservation easements are subject to various tax benefits (e.g. income tax reduction, reduced federal estate tax in the case of inherited property). Conservation easements are voluntary but legally binding agreements between a land owner and a land trust or the government which set long-term restrictions on the development of the land, thus ensuring protection of its natural resources. In **Canada,** an Ecological Gift Programme has been in place since 1995 which provides income tax benefits to those land owners who donate their ecologically sensitive lands to specified recipients, such as environmental charities and municipalities (Illes and Ratliff, 2017).

Step 10: What are the expected costs and benefits of the reform?

Reform options may lead to a range of additional environmental, social and economic costs, benefits and trade-offs that should be explored to compare options and select those with higher net benefits (Box 7). Key issues to explore in this step include:

- What are the direct and indirect environmental impacts associated with each scenario?
- What are the economic impacts associated with each scenario?
- What are the social impacts associated with each scenario?
- Are flanking measures necessary such as temporary compensatory payments or other adjustments (see OECD, 1998)?

Box 7: Costs and benefits of reforming harmful incentives on NC & ES – Some examples from practice

In **Estonia,** hunting and fishing fees were introduced in the 1990s. Since the introduction of the 2005 Environmental Charges Act, revenues collected from the hunting and fishing fees earmarked as a proportion of the 2009 tax year-base are transferred to the Environmental Investment Centre (EIC) and distributed in the form of grants for research (e.g. developing databases), conservation actions (e.g. habitat restoration) and awareness raising. The EIC distributes funds collected by all environmental fees and serves as a transparent platform in providing information to citizens on the use of funds (Illes et al. 2017).

In **Denmark**, the reformed pesticides tax introduced in 2013 has a negative economic impact on famers using the most polluting pesticides (but a positive one on those using pesticides with lower environmental impacts and health hazards). To compensate for these negative economic impacts, farmers benefit from a percentage reduction in the land value tax. However, as land prices differ across Denmark, the amount reimbursed to individual farmers through the reduced land value tax varies. In addition, the tax has different (positive and negative) economic impacts on farmers depending on the type and quantity of pesticides they use (Pedersen et al. 2015). The environmental benefits of the tax are currently being evaluated, however when the tax was introduced, estimates indicated it would reduce the pesticide load by 40 per cent by 2016.

Since the introduction of the ITQ system for fisheries in **Iceland**, several small and locally important fishing companies have gone out of business due to their inability to generate profit from small quotas (Gissurarson, 2000). This has led to increasing vessel size and concentration of quotas through quota transfers (Eythórsson, 2003), but also healthier fish stocks and improved quality of landed catch (Arnason, 2008).

Step 11: Are there obstacles to the reform/ removal of the incentive and how can they be overcome?

It is important to consider the feasibility of reform to ensure subsidies for which removal/reform is realistic are prioritised. The likelihood of success depends on the reform being practical and enforceable, and to what extent there are factors hindering reform (see Box 8). Should a country or regional administration be willing to reform a subsidy, it will need to assess whether it falls under their formal competence. For example, international air transport treaties hinder a comprehensive introduction of unilateral kerosene taxation by a single country, and European frameworks such as the CAP and CFP determine the rules and conditions of subsidization at the EU level. Issues to explore in this step include:

- How politically important and sensitive is the subsidy or incentive?
- Have there been attempts to reform the subsidy in the past? If yes, why did they fail or only partly succeed?

Box 8: Obstacles to reforming harmful incentives on NC & ES

In **Estonia,** hunting fees were reformed in 2013 with the introduction of an annual flat rate hunting fee and changes to the compensation requirements for game damages. Prior to 2013, hunting fees were differentiated by the type of game species and the quality of the hunting grounds; financial compensation to landowners for damages caused by wild game was provided by the State. With the adoption of the new Hunting Act, hunters were required to pay this compensation directly to land owners. While the change in the rate structure has not caused any problems, the new requirement for compensation led to opposition among hunters who believed this change would significantly increase their costs. To address these fears, the annual hunting fee was kept relatively low (currently EUR10). Nevertheless, the amount of the compensation payments for game damages turned out to be much lower than expected, creating an opportunity to increase the hunting fee in the coming years as currently under discussion in the Ministry of Environment (Illes et al. 2017).

In **Cyprus,** although a Regulation 'on pricing and full cost recovery of water supply services' was adopted in 2014, provisions on charging for water scarcity (resource cost) and environmental costs have not been activated due to opposition from policymakers, national authorities, consumer and farmer associations. The main concern relates to the affordability of water for low-income households and farmers, particularly during the economic downturn. Implementation of full cost recovery water pricing would enrich groundwater aquifers, especially those in coastal areas that are increasingly suffering from salinization, and help reduce the dependence on desalination plants, which require large amounts of fossil-fuel-based electricity and cause damage to marine ecosystems (Zachariadis, 2017 forthcoming).

In **Denmark**, when the reformed pesticide tax was initially proposed, it was opposed by agricultural organisations and farmers (Daugbjerg and Pedersen 2004). To gain their support, representatives of key stakeholders groups (farmers, producers/importers, environmental organisations) were engaged in the formulation of the tax through meetings in parliamentary committees, consultation processes and hearings. Reimbursing most of the revenues from the tax through a percentage reduction in the land value tax also helped reduce opposition to the tax.

In **Iceland**, the fishing industry was accustomed to free and unlimited access to the fish stock, and strongly opposed the development of taxes and regulatory restrictions, with some fishers considering the distribution of the ITQs to be unfair (Pantzar, 2017 forthcoming). In response, a levy was introduced for ITQ owners, with revenues used to finance the Fishery Development Fund, fisheries monitoring and surveillance. In 2002, this levy was replaced with a General Resource Tax, complemented in 2012 with a Special Resource Rent Tax. Both of these instruments were later converted into the current annual fishing fee. In addition, a 'Fishing Fee Committee' comprised of economics, fisheries and accounting experts is responsible for calculating the annual fishing fee (Ministry for Industries and Innovation, 2016).

Step 12: Is the reform understandable, practical and enforceable?

It is important to identify whether the proposed reform is understandable (for policy-makers and the public), whether it is practical (i.e., feasible) and enforceable (i.e. implemented). These are key considerations in the design of a reform strategy. The following issues should be explored:

- **Communication**: It is important to make the reform 'understandable' to both policy-makers and the public. Thus, the assessment should investigate how easy it is to communicate a reform or removal of the subsidy, potential public or stakeholder objections (e.g., is it perceived as unfair to some social groups or private interests?) and how easy or difficult it will be to address these issues. In the implementation phase, policy-makers should take into account observations under this step, to make sure the reform is communicated as clearly and transparently as possible.
- **Feasibility:** A general understanding of the feasibility and practicality of reform/removal of the incentive should include insights on the timeframe for reform (e.g., is it viable in the short term, or will it require a longer timeline of gradual stepwise change?), whether it is conditional on external factors (e.g., the financial recovery of a given economic sector), and its complexity (e.g., is it a simple case of removal, is it a phased process, does it require a complex set of accompanying measures?).
- **Enforceability:** Issues related to the enforceability of possible reform options should be highlighted, including monitoring, fines and liabilities, and the need for a regular review/revision process. Issues of capacity building and coordination across stakeholders, different government departments and different levels of governance should also be stressed.

Box 9: Key elements of an EHS reform strategy

Reform should be **carefully designed** with clear objectives, a timetable for implementation (e.g. phased-in with several small, predictable steps to allow actors time to adjust), effective rates which incentivise behaviour change and increase over time (e.g. through indexation). It should be part of a comprehensive package that includes complementary measures and link to wider policy commitments and processes in order to increase its acceptance and likelihood of success.

- In **France** work to identify and analyse biodiversity-harmful incentives (including a report by the Committee to Evaluate Tax Expenditures and Social Security Contribution Exemptions and a report by the Strategic Analysis Centre on government subsidies harmful to biodiversity) was launched in the context of the wider Grenelle de l'environnement process which helped maintain momentum and focus on the issue.

Where needed **targeted compensation measures** may be required to mitigate impacts of the reform on vulnerable groups – i.e. reductions / exemptions, transitional assistance for workers, incentives for innovation, border adjustments, cash transfers, in-kind transfers, reductions/allowances. Mitigation measures should have a clear timeline, with exemptions gradually reduced and linked to effective conditionalities.

- In **Ireland**, the adoption of a more stringent salmon management regime had a significant impact on the livelihoods of commercial salmon fishermen (i.e. drift net fisheries). To address these negative socio-economic impacts, a dedicated hardship scheme was established to support fishermen who opted to exit the sector. The uptake of the scheme was facilitated by calculations of the level(s) of compensation payment and "business as usual" forecast of diminishing net revenues due to already diminishing stocks. In addition, the increased price of angling licences helped share the restrictive burden between commercial and recreational fishermen (Kettunen, 2017 forthcoming).

Regular and transparent monitoring and review system is critical to: (re)assess impacts, ensure effectiveness and implementation of commitments, inform future revisions and build credibility among

stakeholders. Monitoring and reporting can be undertaken at different levels and feed into various policy processes at the national, regional and international level.

- The **12th Conference of Parties of the CBD** called for regular reporting by Parties on progress on Aichi Biodiversity Target 3, setting out a clear timeline and milestones for action to 2018. These reports could be used as a mechanism to monitor and review a country's efforts in this area in light of international obligations.

Stakeholder engagement and communication is essential to build broad political and public support throughout the reform process. Governments should adopt an open, participatory approach to reform, engaging key internal stakeholders (i.e. different government departments) and external stakeholders (i.e. interest groups, civil society, public, parliamentarians). Communication should be targeted and tailored to specific actors and take place throughout the reform process.

- In **Ireland** when preparing legislation for the introduction of a plastic bag levy, the then Irish Environment Minister ensured close collaboration between various arms of government and the government undertook extensive advance consultation with the public, the Irish Business and Employers' Confederation, and retailers. This stakeholder engagement helped increase support for the levy. A national publicity campaign was also launched which reiterated the message that revenues would be used for environmental purposes, which helped address concerns among retailers that they would be blamed for profiting from the levy and raised awareness and support for the levy among the public.

Source: Withana, 2015

Synthesis of Phase 3

Table 4 can be used to summarize the assessment in this phase and identify whether the subsidy is amenable to reform or removal and whether the reform should be taken forward. Overall, several green lights at this stage would suggest that there is a good case for reform and opportunities to launch and implement the reform should be sought (Phase 4).

Table 4: Synthesis of Phase 3: reform scenarios

(9) Are there suitable reform option(s)?		Yes (and what are they?)
		Partially
		No
(10) What are the expected costs and benefits of reform?		Benefits outweigh costs* (synthesis across different costs and benefits, making use of monetary values and most likely other indicators of cost and benefits) and are overall equitable
		Costs and benefits are of the same magnitude

		Costs outweigh benefits and/or there are important equity concerns
(11) Are there obstacles to or pressures for the reform or removal of the subsidy?		No or limited obstacles, suggesting reform is possible
		Some obstacles to reform, suggesting reform may be encouraged but with caution
		Obstacles to reform are significant (stop and explore whether these can be addressed – if so the light can change)
(12) Is the reform practical and enforceable?		Yes (and explain how)
		Partially
		No (and explain how)
Therefore, can options for reform or removal be identified, and is reform recommended?		Yes, proceed with the reform initiative
		Partially (e.g., additional measures needed)
		No, reform/removal of the incentive should not be attempted at this stage, e.g., there is no suitable reform option, and/or costs are too high compared to benefits. However, this does not mean abandoning the reform objective completely, but rather develop conditions for success and plan for subsequent reform

* Note this is not a strict cost–benefit analysis (CBA), but an overarching synthesis assessment that the benefits (economic, social, and environmental) are greater than costs, reflecting concerns of equity and considerations of acceptable trade-offs.

When it is concluded that a reform should be carried out, this should be done on the basis of a reform roadmap. An assessment should also be made as to when the most constructive timing for reform would be. If reform is only partially appropriate, then further efforts are needed to assess reform options before reconsidering. When the current context makes it inappropriate to reform the subsidy in the immediate future, then the conclusion is not to drop consideration of the EHS completely, but to clarify under what conditions it would be worthwhile to revisit the case (e.g., if new technologies become available that would allow cost-effective reform, or if obstacles to reform disappear such as through elections, etc.).

Phase 4: Identifying opportunities for action

The aim of Phase 4 is to understand the underlining policy and political readiness for reform, assess the timeliness of reform and whether it should be prioritized and pursued, thus clarifying which incentives merit political attention.

Step 13: Is there a window of opportunity for reform?

To ascertain the timeliness and likelihood of the success of a reform programme, it is important to understand whether windows of opportunities for action exist, either at national, local or EU level (see Box 10). For example, the 2007-2008 financial and economic crisis presented an opportunity for governments to revise their budgets and increase revenues. The removal of EHS has the potential to create revenues while reducing environmental impacts, create opportunities to increase social equity and potentially support job creation and technological innovation. Such opportunities should be briefly listed and taken into account when communicating reasons for reform.

Box 10: Current and emerging windows of opportunity for reform

Some examples of windows of opportunities and drivers for reform at the international, European/regional and national level include:

- In **Ireland**, the revision of the salmon management regime implemented in the 2007 season, was driven by two key factors. Firstly, a growing body of scientific evidence on the status of salmon stocks and stakeholder consultations led to a general consensus among scientists, managing bodies and stakeholders that salmon fish stocks were diminishing at an alarming rate and required a more stringent conservation and management regime. Secondly, an intervention by Irish and UK conservation NGOs led the European Commission to take Ireland to the European Court of Justice for failure to implement provisions in the EU Habitats Directive for salmon which helped speed up the reform process (Kettunen, 2017 forthcoming).

- In some cases, an external actor can open a new window of opportunity for reform. For example in the **Netherlands**, a 2014 report by the OECD initiated a process to evaluate the existing water levy system given concerns of the shift in the distribution of costs towards households following a reform in 2009 and the lack of specific policy to address diffuse sources in the agricultural sector. Following publication of the OECD report, the Ministry of Infrastructure and the Environment established a tax commission to evaluate the system. This process will be linked to a broader evaluation of long term financing issues of sustainable water use in the Netherlands (Vollebergh & Dijk, 2017 forthcoming).

- In **Portugal**, the government established a commission to reform environmental taxes in 2014 to investigate the potential to shift the fiscal burden towards green taxation. The commission was introduced as part of a wider discussion on addressing the fiscal consolidation challenge facing the country. The commission undertook extensive stakeholder consultations and its final report covered a number of issues, including energy, transport, water, waste, urban and spatial planning, forestry and biodiversity. Some of the commission's proposals were subsequently taken up by the government and put forward in legislative proposals, including a proposed tax on GHG emissions and a plastic bag charge (Soares, 2014).

- In **Denmark**, a tax on pesticides was first introduced in 1982 at a rate of 20% of the wholesale price of pesticides. The tax initially targeted household consumption and was extended to agricultural use in 1996. This extension was part of a wider green tax reform process in the 1990s which aimed at increasing green taxes (transport and fuel taxes, energy taxes, and other green taxes, e.g. on waste, retail packages, water supply and pesticides) and reducing taxes on income. In this context, the

government established a commission of civil servants from different ministries to develop a proposal for a reformed pesticide tax (Pedersen et al. 2011, Pedersen et al., 2015).

- In **Switzerland**, the reform of the system of direct payments to the agriculture sector to better target public goods including biodiversity was supported by a favourable composition of the Parliament in 2013 which included the Green Liberal Party. The process also had a strong champion driving the reform in the then Director of the Federal Office of Agriculture (OECD, 2017).

- At the international level, reform efforts could be framed as responses to international commitments under the **CBD** (on reforming biodiversity harmful incentives and mobilising financing for biodiversity) and the **Sustainable Development Goals** (e.g. on fisheries subsidies). Linking to such international commitments could help increase pressure for action on policymakers, build the case for reform and overcome resistance.

- At the EU level, legislation and commitments can create a basis or set out explicit demands for the reform of harmful subsidies and incentives. For example, the requirement for cost recovery of water provision under Article 9 of the **Water Framework Directive** could be an important driver for reform (as has been the case in France, Germany, Portugal, Bulgaria and other countries). The Regulation on **European Environmental Economic Accounts** provides useful data including on environmentally related taxes and on environmental subsidies and other transfers in EU Member States. Future plans include the development of ecosystem accounts and water accounts which could also provide useful information to support reform (Eurostat, 2016).

Step 14: Is there a potential champion for reform?

For reform to be successful, strong leadership and a broad coalition of support are needed. A strong political advocate or 'champion' (e.g., a dedicated civil servant) of reform will aid the communication of a clear message and support the development of measures to limit or compensate negative effects (IEEP et al., 2007). For example, this can be a particular government department or a politician willing to push for a certain reform (e.g., because the subsidy is deemed particularly damaging or expensive, or as part of a wider political manifesto), or a group of stakeholders concerned by the impacts of a particular incentive (e.g., consumer associations), or a specific local/regional administration particularly hit by a subsidy (e.g., a region affected by water scarcity may be keen to reform irrigation subsidies). It is also important to consider forming coalitions between different interest groups (e.g. environmental and economic actors) who support the same desired outcome even though their motivations may be driven by different concerns as this will help build support for the reform beyond the traditional environmental actors (OECD, 2017).

Step 15: Is there public/political support for reform?

It is important to understand and increase public and political support for the reform when possible, to increase its likelihood of success. In order to do so, the following are useful:

- **Broad inclusion:** To ensure high support for the process, the full participation of relevant agencies, transparency and public participation is required.
- **Identify losers and winners**: It is as important to identify the losers from the reform as to point out the winners – the latter might provide needed political support to face the losers.
- **Assess co-benefits of reform**: Highlighting the co-benefits of the reform helps build support and overcome objections to reform from sectoral lobbies.

Synthesis of Phase 4

Table 5: Synthesis of Phase 4: Table 5 can be used to summarize and visualize the assessment in this phase and identify whether reform of the subsidy is timely and merits prioritization. Only one option per question should be chosen (the others should be deleted as applicable).

Table 5: Synthesis of Phase 4: Opportunities for action

(13) Is there a window of opportunity for reform?		Yes (describe which it is, when and what needs to be done to make use of the window of opportunity)
		Partially
		No
(14) Is there a potential policy champion to reform?		Yes (describe who it is or could be – institution and/or individual)
		Partially
		No
(15) Is there public/political support for reform?		Yes (note which community or stakeholder group)
		Partially
		No (if likely opposition, note where this is expected to come from)
Therefore, is the reform timely and does it merit prioritization?		Yes, reform is timely and should be prioritized and taken forward
		Partially/not a priority yet
		No, reform/removal should not currently be attempted (e.g., there is no current window of opportunity for reform or there is a lack of political/public support). This does not imply that no action should be taken, but rather a focus on developing conditions for success and planning reform when it becomes feasible

Depending on the assessment, a prioritized roadmap can be created that integrates windows of opportunity and creates a politically realistic timetable for reform. A roadmap can take different forms depending on who is leading and developing the reform process and roadmap. Some useful elements a roadmap could include are set out below:

- **A timetable of reform linked to key political processes**: That is, which decision-making and/or legislative process is used and when should a proposal for reform be made. For example, in the EU, as noted in the Commission's 2016 report on the implementation of Regulation 691/2011 (COM(2016)663) a framework for collecting data on environmental subsidies and other transfers and Eurostat guidelines has been developed and the first data collection exercise was launched in 2015. Regular, annual voluntary data collection exercises will continue among Member States and could provide a window of opportunity to take forward reform in the EU. Similarly, country-specific recommendations adopted under the European Semester process as well as EU budget discussions on the multi-annual financial framework (MFF) provide regular occasions for reform. At a national level, annual budget announcements and comprehensive tax reforms are suitable windows of opportunity. Inventories or publications on subsidies (for example as published in Germany and Italy) can also be used as a means of creating windows of opportunity for reform.
- **A timetable of reform involving specific reform elements**: That is, changes to the amount or structure of the subsidy over time, changes to eligibility criteria, changes in conditionalities, new flanking measures and the period in which they apply. For example, this can include a concrete, year-by-year timetable for changes in unit subsidies and in percentage exemption levels, as well as a tightening of eligibility criteria. A clear timetable is important to ensure the reform is sustained over time.
- **A timetable for communicating the reform**: Communicating the benefits of reform will be critical to obtain support and addressing eventual opposition. This is likely to be a separate document from a reform roadmap that a government might be publically committed to.
- **Identification of roles and responsibilities:** This includes an identification of key actors who will be responsible for driving forward the reform including the 'champion for reform', other key people and institutions to be involved in the process. Again, there will be differences across countries as to whether only institutions are noted or whether responsibilities at the individual level are published. For an efficient functioning of the reform, it should at least be clear to those driving the reform how the various parties necessary for the reform process are engaged, and who their counterparts are.

Roadmaps are, of course, highly sensitive documents and likely to be part of a politicized process. In all likelihood, there will only be a short, general roadmap that is publically available (if at all), and more detailed internal documents to guide the process. What is needed is a clarification of the priorities of reform as informed by the subsidy reform toolkit. It should also include a timetable and how to make use of or create windows of opportunity, what the reform will consist of and who will make it happen. The plan itself is likely to 'evolve' with the political climate and process; the fundamentally important issue is that the roadmap helps make the needed reform happen.

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