Centre d'analyse stratégique

Public incentives that harm biodiversity

Summary

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The impact of public subsidies on the environment has been drawing increasing attention over the last few decades, in particular within the OECD and the EU. Focus on biodiversity is more recent: in 2010, the Conference of the Parties (COP) of the Convention on Biological Diversity (CBD) adopted a strategic plan whose one of its main aims is to reform, eliminate or reduce these grants by 2020. The European Community strategy supporting biodiversity has been recommending such elimination since 1998. In France, the Planning Act on the implementation of the Environment Round Table (Grenelle I, August 2009) explicitly provides that "the State, on the basis of on an audit, will review tax measures that are harmful to biodiversity and will propose new tools to allow a gradual transition to a tax regime that will better suit to new environmental challenges."[1]. This act prompted the Centre for Strategic Analysis to set up, at the request of the Secretaries of State for Ecology and Planning, a group made up of experts in the field, economists, trade union representatives, businesses, environmental groups and members of Government.

This consultation encountered difficulties associated with identifying a number of subsidies that are neither reported or spelled out, assessing those characteristics that are harmful to biodiversity and characterising measures that need reform. Despite the calibre of the contributions and the commitment of the rapporteurs, the work that has been conducted cannot be deemed to be genuinely complete. Nonetheless, the group strived to reach pragmatic recommendations which, if applied, would reduce harm to biodiversity.

The group therefore ruled out overly general considerations on current modes of development from its scope of analysis. It also strived not to develop issues linked to non-financial forms of intervention by public authorities, although such issues are frequently raised during debates.

On the other hand, the group strove to address the issue in a broad sense and with a positive spirit, which consisted of never deeming a subsidy to be unwarranted and therefore easily eliminated. Occasionally, government incentives do indeed constitute direct support for activities that, when carried out, can harm biodiversity. In such cases, the group, rather than aiming to eliminate them, sought to reorient them toward less harmful practices, keeping support sum constant. It tackled the issue starting with the major causes of anthropic pressure on biodiversity, an approach commonly used in international circles. Furthermore, it would appear that measures which today play a role in harming biodiversity are often the result of choices inherited from the past, when the issue was not adequately recognised.

■ Definitions, methods and limitations

The notion of subsidy requires some clarification. In this report, the concept of public incentive harmful to biodiversity refers to three different notions:

- transfers of money from the State or regional authorities to private or, on occasion, public actors;

(1) Articles 26 and 48 of Law No. 2009-967, the so-called “Grenelle 1 Act”.

- a government action likely to deliver an advantage in terms of revenue;
- failure to internalise certain external effects.

The working group settled upon an extensive definition of public incentives harmful to biodiversity that simultaneously includes subsidies, tax credits, regulatory advantages and the failure to enforce or the partial enforcement of regulations as well as implicit subsidies.

In order to reform public incentives harmful to biodiversity, several methodological frameworks have been put forward by the OECD, the Economics of Ecosystems and Biodiversity (TEEB) study, and the European Commission. The working group adopted a three-phased approach, consistent with the mission statement:

- a survey of public incentives likely to be harmful to biodiversity;
- an attempt to describe certain links between public incentives and the loss of biodiversity;
- recommendations on reconfiguring public incentives identified as harmful.

A causal link between public incentives and biodiversity can be tricky to establish because such links are often indirect or vague. A general framework called the DPSIR (*"Driving forces-Pressures-States-Impacts-Responses"*) Model has been recommended by the OECD. This model involves selecting indicators, at the level of driving forces (drivers) as well as pressures (deterioration of habitat, overexploitation, pollution, invasions) and ecosystem responses. The group very quickly realised that the relationships among these indicators could be complex and even challenging. As to reform, although conceptual reference to a price system internalising all costs and advantages is crucial, recommendations sometimes try other forms of internalisation that would appear to be more realistic, such as standards and regulations.

■ The five main causes of loss of biodiversity in France

There are several definitions of biodiversity that refer, on the one hand, to the variety of existing species and the various levels of organization of life and, on the other hand, to functional approaches and the multiplicity of ecosystem services.

The definition used here, as well as by the working group chaired by Bernard Chevassus-au-Louis[2], refers to the entire fabric of life – fauna, flora, and micro-organisms – and deals with two major variables: the diversity of life with its three main levels of organisation and the appreciation of its abundance, which simultaneously determines its importance to mankind and its chances for survival. Therefore remarkable diversity, ordinary diversity, functional diversity, the multiplicity of ecosystem services and landscape diversity are recognised.

(2) Centre d'analyse stratégique (2009), *Approche économique de la biodiversité et des services liés aux écosystèmes,* report of the commission chaired by Bernard Chevassus-au-Louis, 400 p, www.strategie.gouv.fr/content/rapport-biodiversite-%C2%AB-l%E2%80%99approche-economique-de-la-biodiversite-et-des-services-lies-aux-eco.

Going beyond definitions, understanding and tracking the state of biodiversity imply the ability to monitor it *via* observatories and, as far as possible, quantifying it, particularly in order to keep the community informed on its evolution.

Research published over the last two decades agrees on the accelerating pace of biodiversity loss and on the existence of five major pressures that are responsible for it:

- the destruction and the qualitative deterioration of habitats owing to fragmentation, changes in land use, land development, simplification and the intensification of farming practices;
- the overexploitation of renewable natural resources (fishery resources, water, soil and forests);
- the pollution (nitrates, pesticides, heat pollution and drug residues);
- the climate change, which exerts an influence on all balances but is the object of many other forms of actions and policies;
- the invasive exotic species.

It is tricky to establish a ranking of these causes, even if the main impact appears to be the result of land development and habitat deterioration. The effects tend to be mutually reinforcing. Climate change would potentially appear to be the major cause, which, of course, depends on both national and international policies. There is also the issue of national policy coordination on invasive exotic species, in particular to ensure compliance with WTO rules. Finally, it is clear that although public subsidy mechanisms can apply in an undifferentiated manner to the entire nation, their effects are often distinctly different depending on the environments concerned. Alternatively, public support is often concentrated on land that is particularly rich and/or fragile in terms of biodiversity.

■ Public incentives encouraging the destruction or deterioration of natural habitats

Public incentives can contribute to three types of habitat destruction that raise concern in France: development, partial development and fragmentation.

Land area is said to be developed when it is deprived of its “natural” condition, whether farmland or forest, in order to be built on, covered or converted into garden, sports fields or leisure space. There is a strong development trend (21 000 km² since 1990), mainly due to discontinuous urban zones and industrial and commercial areas, to the detriment of farmland.

Public incentive packages can contribute to urban sprawl and to the remoteness of centres of activity by influencing individual choice or specific policy determinants to boost economic activity. Incentives for purchasing primary dwellings are preferentially provided to new housing, which is less expensive the farther it is from city centres, whilst home improvement does not consume space. The same trend is evident in grants for building new homes as a purchase or rental investment. The low cost of transportation and the reduction in its relative cost, in particular when compared to housing, encourage the choices that lead to urban sprawl. To attract business to their

areas and to increase tax receipts, peripheral communities tend to offer lower business tax rates (since replaced by the *contribution économique territoriale* or regional business tax). Levying taxes at the local level gives rise to harmful competitive effects because it drives over-development and overconsumption of space.

Partial development is an intermediate form of development. It can be seen in simplified landscapes and in the intensification of land usage for home-building. Since the early 1950s, the change in land use and the intensification of production systems have led to a decrease in the heterogeneity and the complexity of agricultural ecosystems. Forest habitats are, on the whole, in good condition.

The working group identified public incentives that can, under certain conditions, encourage practices that reduce the natural functions of agricultural habitats, notably through incentives to intensify or to maintain intensive farming (aid having an influence on the price of factors of production) and the simplification of landscapes (aid determining whether or not semi-natural elements such as hedgerows, stands of trees, ponds and the choice of crops are maintained). With respect to forest habitats, the outlook for the development of fuelwood and second generation bio-fuels could ultimately increase the proportion of partially-developed forest habitats.

Fragmentation reduces available habitat area and increases the isolation of habitat patches (severing the contacts between populations). It is often associated with the construction of linear transportation infrastructure in land habitats or a dam in water habitats. Some aid contributes to fragmentation, in particular public funds for road, rail or river transportation systems or undercharging for their use. Furthermore, there are several forms of fees for services or for the use of the public domain that do not sufficiently factor in biodiversity costs.

■ Public incentives encouraging the overexploitation of renewable natural resources

In France, the overexploitation of three natural resources is deemed to be a source of concern: soil, fishery resources and water.

Several human activities lead to *soil overexploitation,* which is reflected in depleted carbon stocks. Among the forms of public incentives that are likely to encourage such activities, the working group of experts identified:

- aid that contributes to changes in land use (ploughing up prairies for annual crops, soil sealing in agricultural areas), in particular by influencing certain land-consuming activities, such as extending developed land (housing, activity areas), transportation infrastructure and other shared amenities (public or private), or by encouraging the development of agro-fuel;
- aid that contributes to the intensification or maintenance of intensive practices that reduce the carbon content of soil (indirect measures encouraging production yield, mechanisation and the use of inputs).

Public incentive packages contribute to increasing *overexploitation of the seas* and fish stocks. In particular, commercial fishing, threatened with lower catches and competition from European fishing fleets, is facing significant fluctuations in its

revenues, which are sliding, and benefits from several state support measures, of which the most significant is the exemption from the domestic consumption tax on petroleum products (TIPP). Furthermore, recreational fishing – which does not benefit from government subsidies – should be subject to increased monitoring (catch monitoring programmes) and disclosure.

Some public incentives could intensify overexploitation of water resources for different uses and therefore impact the biodiversity of certain water systems:

- household usage is charged at a rate that encourages private operators, who serve 80% of the population, to promote consumption;
- industrial water use strongly decreases but some usage is exempt from tap-in charges;
- the tap-in charge collected by water agencies is spatially undifferentiated;
- the use of water resources for power generation benefits from several different subsidies or tax credits;
- agriculture usage also benefits from tax rates that provide no incentive or that are non-internalising which can lead to steady consumed volumes despite the reduction in irrigated land. Although support measures for initial investment and for the renewal of infrastructure are generally well thought out, this trend is associated with a block-rate for system services and a tap-in and resource consumption charge with poor incentives.

As the French Economic, Social and Environmental Council notes, most water market participants take "comfortable water conditions" for granted in continental France, which makes it hard to question the relevance of irrigation systems and so far, has prevented from the introduction of markets for water rights or from the development of better insurance mechanisms. Nevertheless, gradual climate change threatens to cause prolonged dry spells and to disrupt the water systems of the different basins, once again raising these kinds of questions in a near future.

■ Public incentives encouraging pollution

Pollution impacts all environments: air, soil and water. Atmospheric pollution refers to a set of elements (aerosols, trace metals, persistent organic products, ions and micro-organisms) whose presence is the result of natural processes (re-suspension of particulate due to wind, foliar emissions, volcanic activity and marine aerosols) and the actions of humans (various industries, automobile traffic, incineration plants and residential heating). The regulation of such pollution has been addressed by several laws and by the international commitments made by France. Public incentives encouraging emissions mainly concern laws or taxes on industry and transportation that insufficiently internalise costs and that offer little incentive in the areas of fossil fuel and biomass use.

Human-induced diffuse soil contamination by trace metals is mainly associated with airborne contributions (industrial discharge and transportation) and to agricultural spraying (as well as with certain products, such as chlordecone, whose use continued beyond a reasonable time). Polluted sites raise problems whose significance is often magnified by their "orphan" nature and by the difficulty encountered in identifying the

source of certain pollutants. The internalisation of costs is highly problematic when there is no extension of liability to certain market participants, and constitutes a *de facto* subsidy. The polluter pays' principle is in fact often unenforceable. The general tax on polluting activities (TGAP) levied on domestic and related wastes and special industrial wastes, which was designed in order to provide funding, is a weak financial incentive. Moreover, multiple exemptions have been granted.

Finally, water pollution appears to be clearly under-charged. This relates primarily to urban pollution. However, the greatest cause for concern is perhaps nitrates from agricultural sources, which are causing large-scale problems in some rural areas, especially in Brittany. This reflects patently weak internalisation and results in a set of expenditures for households, especially on their water bill. According to the Ministry for Ecology, the costs of nitrogen treatment at water purification plants ranged, in 2003, between 220 and 510 million euros, to which the additional costs incurred by these services (cleaning catchment points and intake piping clogged by eutrophication, moving catchment points, etc.) must be added. The total expenditures allow 3,000 tons of nitrogen to be treated, i.e. only 0.4% of the excess discharged into aquatic environments.

■ Public incentives encouraging the introduction and the spread of invasive exotic species

Some human activities have made it easier for some flora and fauna species to avoid natural obstacles and develop themselves in some regions over the world. Species have therefore been introduced into areas far from their original habitat either accidentally or intentionally. Occasionally they establish themselves so well that they severely disrupt entire ecosystems and become invasive exotic species or "invasives". Their impact on biodiversity, health and human activity is very broad and varies in its severity. A biological invasion can be spontaneous, but a set of human activities is very often responsible for the introduction, spread or the invasive character of exotic species.

The movement of people and goods, whose volume has grown dramatically with the liberalisation of international trade, increases the potential for the introduction of such species whilst habitat deterioration, pollution or climate change undermines the ability of environments to resist invasion. Some activities introduce accidental risks while other activities raise risks that can be categorised as structural (transportation and tourism) when they do not introduce exotic species intentionally or through negligence (new crops, pets). Finally, a species can become invasive because of changes in its environment. Some of these activities receive subsidies.

The experts working group identified very few subsidies that directly encourage biological invasion. Such incentives result mainly from the State's failure to act at the regulatory level in the fight against invasive species and against the non-internalisation of negative external costs.

Transportation, ports and airports are heavily subsidised or are under-charged. In particular, international transportation does not pay for its externalities, including those impacting biodiversity (no domestic consumption tax). Reduced Value Added Tax (VAT) rates are also frequently reported (some pest control products, ornamental plants and zoos). External costs arising from invasions are usually not internalised, in

particular the cost of transportation *via* the structure of import duties. However, regulatory inaction would appear to bear most of the responsibility. European Community policy, for example, does not simplify coordinated actions among Member States. Furthermore, its progress is slow in setting up a European strategy for fighting invasive species. Finally, international monitoring is lacking on the whole.

■ Recommendations

In light of the scope and complexity of the mission, the report distinguishes between *general guidelines* defining medium-term goals and *proposals*, which are more in line with recommendations for concrete reforms in the short term. The group's mission was to identify the subsidies harmful to biodiversity and to put forward options for reform, not to identify privileged situations for the purpose of budgetary savings. Moreover, all the guidelines and proposals should, at first glance, not be interpreted as modifying the amount of aid from which a sector or type of activity benefits, but rather as an effort to eliminate or reduce harmful incentives.

This summary presents a range of recommendations from the working group, with a focus on:

- those that are the easiest to implement;
- those that are the most innovative.

They are divided into categories. Only an outline of the proposals is presented here and the reader is encouraged to refer to the *Recommendations* section of the report[3] for further information.

Recommendation No. 1 – Transparency and reporting

In light of the richness and vulnerability of biodiversity in France and, in particular, in its overseas departments and territories (DOM-TOM), public incentives should be evaluated and (from time to time) conditioned with greater rigour.

Adopt a cross-cutting policy on biodiversity.

Recommendation No. 2 – Assessments

Assign the same weight and the same degree of precision to impacts on biodiversity as that accorded to greenhouse gases in impact studies, environmental assessments of programmes and projects and in impact assessments of draft legislation transmitted by the government to the parliament.

Better integrate biodiversity into socio-economic assessments for infrastructural projects by:

- taking into account the indirect impacts caused by new infrastructure, in particular those driven by resulting urbanisation;

(3) Centre d'analyse stratégique (2012), *Les aides publiques dommageables à la biodiversité*, report of the commission chaired by Guillaume Sainteny, 409 p., www.strategie.gouv.fr/content/rapport-les-aides-publiques-dommageables-la-biodiversite

- not reducing the issue of impacts on biodiversity to harm to protected species, but extending it also to impacts on the functioning of ecosystems;
- reviewing the values used in socio-economic calculations so as to integrate, even if partially, the values of biodiversity. Nevertheless, as long as the establishment of reference values for biodiversity is not easy to calculate, immediately start with strengthening the enforcement of requirements related to preventing, mitigating or offsetting such impacts.

Recommendation No. 3 – Public Procurement

Use public procurement as a lever to reduce incentives harmful to biodiversity.

Recommendation No. 4 – Make taxes and fees more incentive

Initiate a reflexion on how to allow more frequently the executive branch to introduce true incentive eco-taxes under satisfactory legal security conditions as well as under compliance with the Constitution and the general principles of law (especially tax equality).

Change the fees system to better integrate impacts on the environment and on biodiversity.

In addition, make State fees payable by marine aggregate operators depending on the ecological sensitivity of sea beds and marine environments.

Institute a tax extending the fee for occupancy of the marine public domain beyond the 12-mile limit in the exclusive economic zone or the continental shelf.

Since the mine owners, the holders of mining licences and the developers of combustible oil and gas reserves are exempt from fees imposed by municipalities and "departments" for mines beyond the limit of 1 nautical mile from the baseline, a State fee should be created and collected by the State, between 1 and 12 nautical miles inside territorial waters.

Recommendation No. 5 – Land development and urban sprawl

Retain the "Zero Interest Loan Plus" (PTZ+) for new intra-urban housing and/or housing near dedicated public transport lanes (TCSPs).

Deny regional authorities the power to grant a 50% exemption on the development tax on single-family homes built in sparsely-populated areas financed with the help of PTZ+.

Redefine geographic zoning provided for the "Scellier scheme" and other schemes for rental investments in new homes by:

- excluding Zone B2 areas (agglomerations of more than 50,000 residents and less than 250,000 residents);
- reserving this scheme for intra-urban areas and/or for areas closed to public transportation.

Include criteria such as biodiversity impacts and control of urban sprawl when calculating the compensation allocated to local municipalities for expenditures related to establishing or revising their planning documents.

Make it a requirement to cite the distance to the closest rail station or public transportation stop when opening up new urban development zones ("U zone") in local town plans (PLUs), assessing a PLU's environmental impact and marketing new subdivisions.

Eliminate the 50% tax credit on the value per square meter on which the development tax applicable to warehouses and hangars that are not open to the public but operated commercially is calculated, no matter their location.

Make the low density tax (VSD) mandatory in logistics zones, warehouses and hangars.

Increase the leasable area tax (TASCOM) on businesses located in peripheral areas and lower this tax on businesses located in city centres.

Revise the development tax on car parks:

- reduce the difference in tax between car parks integrated into buildings and those that are not;
- revise this tax rate to better internalise biodiversity costs.

Recommendation No. 6 – Transportation

Slow down habitat fragmentation. Reducing public aid for creating new infrastructures in favour of maintaining, requalification and upgrading of the existing transport network would appear to be a solution for mitigating the harmful impacts of public subsidies to transportation.

Better internalise the costs of road infrastructure on biodiversity:

- by making the grant of building permits depending on much stricter mitigation-offsetting measures or by instituting a tax that internalises the harm associated with the construction of infrastructure;
- by charging *via* tolls for damage to biodiversity arising from the use of highway infrastructure and/or *via* a percentage of the price of fuel sold at service stations within their site coverage.

Recommendation No. 7 – Water

In the short term, institute a floor rate for each use of water in the gross water intake fee and revise the ceilings rates in order to integrate the recovery of aquatic environment and biodiversity costs in addition to the recovery of water management costs.

In the medium term, institute a net water intake fee or a gross one adjusted by a correcting coefficient. In addition, apply the water intake fee to drainage.

As soon as possible, enact the implementing decree for Article 161 of the Law "Grenelle 2" establishing the rate of water system loss above and beyond which

public water supply systems must draw up a draft multiannual programme of water system improvement work.

Revise the fee on non-domestic pollution by:

- targeting the fee on priority hazardous substances from the EU Water Framework Directive (2000/60/EC);
- reviewing rates so that they take into account the costs of priority hazardous substances on the aquatic environment and biodiversity;
- including the heat factor throughout the year;
- making the collection and treatment of wastewater subject to the fee.

Review the limits below which an activity pays the household pollution fee (and not the non-household pollution fee), so that activities making a significant contribution to the discharge of priority hazardous substances will have to pay the fee for non-household pollution.

Make all hydroelectric facilities subject to the barrier fee.

Recommendation No. 8 – Agriculture

Revise the tax structure for farm production factors by lowering social contributions and land taxes, partially offset by an increase in the tax on inputs that are potentially harmful to biodiversity when they are used excessively or inappropriately (fertiliser, crop treatments and water).

Apply the standard VAT rate to fertilisers and plant health products.

In the longer term, strengthen the recognition of biodiversity in financial support received under the first pillar of the Common Agricultural Policy (CAP) (modulation of the amount of Single Payment Entitlements as a function of environmental criteria, in particular criteria related to biodiversity).

In the longer term, strengthen agro-environmental measures derived from the second pillar (CAP) targeted on biodiversity (technical and budgetary strengthening and better recognition of regional approaches).

Recommendation No. 9 – Industry

Include arsenic and selenium in the general tax on polluting activities (TGAP).

Experiment a true internalising eco-tax (or component of the TGAP) on an atmospheric pollutant.

Recommendation No. 10 – Regional Authorities

Include a biodiversity criterion in the calculation of the overall operating grant. A surface structure criterion which would rely on relatively irrefutable data would appear to be the most appropriate.

Recommendation No. 11 – International

On the occasion of the forthcoming G8 and G20 meetings, France could propose a commitment on the medium-term rationalisation and elimination of subsidies that are harmful to biodiversity along the lines of the commitment on fossil fuel subsidies adopted during the G20 meeting in Pittsburgh in 2009.

Develop debt-for-nature swaps and specifically increase the percentage of Debt Reduction-Development Contracts (C2D) allocated to biodiversity.