
SUBSIDY REFORM: DOING MORE TO HELP THE ENVIRONMENT BY SPENDING LESS ON ACTIVITIES THAT HARM IT

Ronald Steenblikⁱ
presented at a workshop on
Doing More With Less
IUCN's 50th Anniversary
Fontainebleau, France
November 1998

1. Introduction

“The Convention on Biological Diversity calls for financial incentives in support of its objectives: to conserve biodiversity, use biological resources sustainably, and share the benefits of this use equitably. Governments, however, spend billions of dollars annually in subsidies to sectors such as agriculture, energy, forestry, fisheries, mining, and transport; many of which threaten or destroy biodiversity. Reforming these perverse subsidies is an obvious cost-effective way to improve the status of biodiversity.”

Forward to the IUCN web page on subsidies

Nowadays, it is widely accepted within the environmental community that subsidies to energy production and consumption, transport, agriculture, fisheries, and other natural resource based industries, tend to undermine conservation objectives. This is not a recent discovery, of course. Economists have been commenting for many years on the consequences of supporting industries with significant environmental externalities. The difference today is that the issue has been picked up by virtually every major national and international environmental NGO and made an integral element of their programmes of work. Subsidy reform, once the lonely pursuit of finance ministries and trade economists, has become a *cause célèbre* of the green movement.

Indeed, over the last three years, virtually every major international environmental NGO has sponsored a major study attacking what have come to be labelled as “perverse” subsidies. Headline-making studies include those published by or for the Earth Council, Greenpeace International, the International Institute for Sustainable Development, the Worldwatch Institute, and the World Wide Fund for Nature.ⁱⁱ Some of the initial forays relied heavily on work produced by the major inter-governmental

organisations.ⁱⁱⁱ Increasingly, however, the NGOs are publishing data and analyses with a high value-added content. And more studies are in the works. The Earth Council's study, for example, is being followed up by a second phase, which will focus more narrowly on the effects of subsidies on biodiversity, this time under the auspices of the sponsors of this symposium, the International Union for the Conservation of Nature.^{iv}

The decision by the green movement to shift its powerful weight behind the cause of subsidy reform can only be seen as a good thing. Yet even environmental NGO's resources are limited, which raises the question of how they can most effectively involve themselves in the debate. Their main vehicles of advocacy to date — studies and press conferences — have helped to keep attention focused on the issue. But, to be effectual, NGOs must be ready to commit themselves for the long term. Multilateral subsidy reform is not as simple as getting governments to place a cuddly marine mammal on an endangered species list. It requires the marshalling of economic arguments, an understanding of political processes and constraints (especially social constraints), persistence and, above all, patience. And if, as is heard more and more — most recently in David Roodman's book *The Natural Wealth of Nations* — that subsidy reform should be seen as part of a more comprehensive effort to redesign the fiscal policies of governments^v, then clearly this is a campaign that is not going to be won in the short term.

This paper has one overarching objective: to underline the importance of continuing the reform of government policies and programmes that generate “biodiversity-perverse” subsidies, and to encourage the conservation community to further develop their capacity to speak authoritatively on the issue. As a prelude, the paper reviews the inefficiencies created by subsidies, and the effects they have on the environment in general and biodiversity in particular. It then turns to the current multilateral mechanisms being applied to discipline subsidies to resource-based sectors, with a view to identifying areas in need of further strengthening. Most of the mechanisms used to date reflect attempts to deal with the trade and budgetary effects of subsidies. The application of these disciplines can be expected, in general, to reduce or even eliminate many of the policy-driven incentives to farm intensively, overfish and burn dirty fuels. But governments usually have considerable discretion in how they interpret such disciplines; large variations in the incidence of subsidies within nations can have important implications for their effects on particular ecosystems. It is in identifying such links, this paper suggests, that civil society, particularly environmental NGOs, can make the greatest contribution to the process of subsidy reform.

2. Subsidies and their effects

Few terms from public finance and economics are as familiar in daily life, or as evocative, as “taxes” and “subsidies”. The man on the street has no trouble in defining them: what he renders unto Caesar are taxes; what he gets back is his due; everybody else receives subsidies. When the 18th and 19th century economists spoke of subsidies (or “bounties”) they generally had in mind government grants, especially to encourage exports. In recent years, however, the term “subsidy” has been pressed into service as a catch-all for any benefit granted to an individual, firm or sector, including those resulting from government inaction. The proliferation of legal definitions for “subsidy” invests the word with even more connotations. For the purpose of this first section, however, a simple definition for a subsidy suffices: a subsidy occurs when public funds are used for private purpose — where the public funds are financed, not just transfers from taxpayers but also ones paid by consumers and producers, such as those created by trade barriers.

2.1 Static effects

While economists may not agree among themselves on the precise definition of subsidy^{vi}, they do generally agree on their static, first-order effects. Theory shows that these depend on a number of factors, among which the elasticities of the subsidised activities, the form of the subsidy, the conditions attached to the subsidies, and how they interact with other policies, are the most important.^{vii} At their most benign, subsidies can serve redistributive goals, or help to correct market failures. However, subsidies to promote specific industries — the focus of this paper — can also divert resources from more productive to less productive uses, interfere with price signals, and in so doing reduce allocative efficiency.

The effects of subsidies on allocative efficiency are sufficiently understood and appreciated that it is not necessary to elaborate on them here. Less appreciated, however, are their effects on the distribution of wealth and income. These effects both help explain the persistence of subsidies and, ironically, provide a powerful argument for their reform. Although governments are often motivated to provide subsidies in order to benefit specific groups of people — or, more specifically, voters — they rarely like to be seen doing it through such transparent devices as direct income-support payments. Hence activities or things tend to get subsidised rather than people.^{viii}

Perversely, the distributive consequences of subsidies are often precisely the opposite of what the framers of the policies intended. Most countries that

subsidise farmers or fishers profess to be protecting the small operator. Yet, by design, subsidies that are tied to outputs or inputs tend to favour larger producing units. Even the distribution of more direct payments can often be highly skewed. Recently, for example, the Environmental Working Group counted up all the checks written by the U.S. Government to farmers between 1985 and 1994 (i.e., before the 1995 “Freedom to Farm” Act was passed) and found that just 2 per cent of recipients accounted for over 25 per cent of the transfers.^{ix} Studies done of agricultural support programmes in other countries appear to lend credence to the proverbial 80:20 rule — that 80 per cent of support goes to 20 per cent of beneficiaries.^x

Direct, budget-funded, income payments at least have the virtue of high transfer efficiency: most of what a government allocates to such programmes end up in the pockets of the intended recipients — at least initially. Subsidies to products or inputs, by contrast, leak away to other activities, often in unexpected or unintended ways. Studies of policies used to support market prices for agricultural commodities, for example, have shown that typically only 20 per cent of the gross transfers reach the target group. The remainder gets dispersed among the suppliers of inputs, programme administrators, and even fraudulent operators.^{xi}

2.2 Dynamic effects

Over time, however, even that which does trickle down to the target group tends to be dissipated through the capitalisation of rent into the least elastic factor of production, a point made by David Ricardo over 170 years ago. Accordingly, the gains from subsidies tend to be transitional, benefiting mainly those who can immediately take advantage of a new scheme. Their successors end up paying higher prices for land, fishing licences, mineral rights. In short, as the economist David Friedman once quipped: “the government can’t even give anything away”.^{xii}

Government policies and programmes that give rise to subsidies are almost always created to serve a (ostensibly public) purpose — to redistribute wealth, to support income, to favour a particular region or industry, to keep voters happy. But if so many support policies are so inefficient at accomplishing these goals, why do they persist for so long?

The “transitional gains trap” offers an important, but not the only reason why subsidy programmes prove so difficult to remove after they are put into place.^{xiii} Sometimes people themselves are entrapped, particularly when subsidies are used to support employment in rural industries, such as agriculture, fisheries and mining, which require specialised skills but not necessarily much formal education. The resulting low mobility of the

affected labour force itself becomes a barrier to reform, making structural adjustment all the more painful when it comes.

Resistive forces to the reform of subsidy programmes also have their roots in entrenched views regarding the role of government in particular sectors. The public financing of irrigation and drainage, for example, has a history as old as civilisation itself. The Roman Emperor Hadrian was not the only leader from antiquity to finance road building from general taxation. By the nineteenth century it had become common for farmers in Europe to seek and obtain protection from lower-priced imports and to receive subsidies for their exports. And subsidies to distant water fishing fleets have been around since the post-Napoleonic era.^{xiv} Old habits die hard.

Another factor working against reform is that subsidies themselves create a pool of money out of which recipients can influence the very political process that channels money to them in the first place. In many instances subsidies redistribute wealth from a large number of unknowing contributors to a smaller number of beneficiaries. The latter lobby vigorously to defend their handouts; the former seldom bother, or are empowered, to prevent them.^{xv} In any case, short-term bursts of public outrage against particular subsidies are usually ineffectual; the offending programmes simply get renamed or cloaked in the latest policy fashion.

Finally, the bureaucracy itself can constitute an obstacle. That a government ministry can develop a vested interest in the continuation of the industrial support programmes it administers is universally recognised, though there are of course exceptions. More subtly, the bureaucratisation process often feeds a pernicious notion that the subsidised activity forms part of the natural order of things, converting subsidies into entitlements and making any attempt to curb them politically hazardous. This subversion of rational policy-making feeds the spread of subsidies, especially in the following forms:

Sympathetic support: This is support that influences the direction of technological developments in a manner that happens to benefit a domestic industry. Many examples can be found in the energy sector, such as when governments support the construction of coal-fired “demonstration” power plants that are dependent on coal from high-cost domestic mines rather than on imported coal.^{xvi}

Compensatory support: When support leads to *higher* input prices for downstream consumers, especially those that derive a significant proportion of their sales from exports, compensation is often provided in order to keep them buying domestically produced raw materials. A typical example is a

subsidy to a food processing industry (e.g., tomato canners, producers of potato starch) to compensate it for paying above world prices for its feedstock. Support is also often provided to individual firms in an industry, such as trucking, when deregulation renders the capitalised value of restricted operating rights — e.g., licences — worthless.

Subsidy clusters: When support — or the failure of governments to consider opportunity costs — leads to *lower* prices for downstream consumers, new investment to take advantage of the cheap input is often encouraged. Hence aluminium plants are attracted to major hydroelectric projects by concessional power charges, thereby increasing regional dependency on the continuation of subsidies.^{xvii}

Taken together, these derivative subsidy forms lend support to the notion that bad subsidies tend to chase out good ones — what C. Ford Runge has called “Gresham’s law of subsidies”.^{xviii}

3. Subsidies and ecosystems

Subsidies affect the environment, including biological resources, through many pathways. The most obvious, perhaps, is when they directly stimulate economic activities that interact with the environment. Despite reforms in recent years, there are plenty of these types of subsidies still around: subsidies to the use of fertiliser and pesticides, to automobile ownership and parking, to the consumption of electricity, just to name a few.

Biodiversity is often the loser. Administered pricing systems for agricultural products, by favouring a small number of easily standardised commodities, create disincentives to diversify varieties and species grown. Subsidies that encourage overfishing push harvest levels beyond sustainable yield, in extreme cases precipitating not only the economic collapse of fisheries but also permanent changes in marine ecosystems. Subsidies to roads and railway lines lead to the expansion of transport corridors which, unless very carefully designed, divide habitats into pieces too small to support wide-ranging animals, such as large cats.

It is not just the effect of subsidies on marginal prices and costs that determine environmental effects, but the conditions that are attached to their provision as well. Numerous examples are provided by agricultural and fisheries policies. Price stabilisation policies for crops reduce the need for farmers to raise livestock as a hedge against fluctuating grain prices; payments requiring continued cultivation of a supported crop or crops create a disincentive to rotate.^{xix}

Tracing the causal relationships between subsidies given to particular sectors and their effects on biodiversity can provide insights useful in the development and reform of policies. But, ultimately, it is the interactions of subsidies, and their effects, at the scale of eco-systems, or eco-regions, that determine environmental outcomes. In this domain, understanding local conditions becomes vital.

Looking at such interactions at the geographic perspective — i.e., at a scale sufficiently large to observe externalities among different industries and sectors — suggests that the clustering of related industries, especially if they are subsidised, can generate patterns of negative externalities that are analogous to the positive externalities associated with clustering that have been so much vaunted by economists since Alfred Marshall. The Columbia River basin, in the north-west corner of the United States, provides a striking, but hardly unique, example of both phenomena (Box 1).^{xx}

In theory, these negative impacts can be mitigated by measures to internalise such negative externalities, or to deal with fundamental structural problems. In practice, however, policy makers have often found it easier simply to spend more money on the problem. Hence — to provide a typical example — when water shortages loom in arid regions, rather than raise prices to irrigators, governments often prefer to finance the installation of water-conserving technologies on farms.

Box 1. Subsidies and salmon

The Columbia River is one of the world's natural wonders. Its salmon fishery, once the most productive in the North America, sustained a large indigenous human population for centuries. But it was the river's enormous hydroelectric potential that drove the rapid development of the basin.

Each day the Columbia expends as much energy as is released by 25 moderate-size atomic bombs. Taming and harvesting this energy has been one of the great engineering feats of modern times. The first hydroelectric dams were built on a relatively modest scale, in keeping with local economic growth. In the 1930s, however, as the Bureau of Reclamation expanded its activities into the area, dam building activities shifted into a higher gear. The biggest dam of all, the Grand Coulee, was initially built with far more capacity than needed — in part owing to pressures from local farmers to have a reservoir high enough (i.e., close enough to the elevation of their fields) that they could draw water from it for irrigation. The surplus electricity generating capacity found a ready market, however, as aluminium companies, airplane manufacturers and the Manhattan Project moved into the area.

The regulation of the river's mighty flow by hydroelectric dams also facilitated barge navigation. Locks were built along the Snake River, one of the basin's main tributaries, turning the town of Lewiston, Idaho — some 750 kilometres from the Pacific Ocean — into a major port, particularly for feed grain and wheat destined for markets overseas. In another part of the basin, between Grand Coulee and the Hanford Atomic Works (home to what Blaine Harden describes as "the Western world's largest and leakiest nuclear dump"), massive electric pumps lift water from behind the Grand Coulee reservoir onto a high plain where farmers in the Columbia Basin Project produce mostly alpha and horticultural crops.¹

According to Hardin, every one of these activities has benefited from generous levels of government financial support. Barge operators are charged user fees that cover only one-quarter of the operating costs for locks on the Columbia and Snake rivers. The production and export of the grain they transport has benefited (until recently) from various agricultural support programmes. Farmers in the Columbia Basin Project enjoy both cheap water and cheap electricity. And so on.

While subsidies have clearly favoured the economic development of the region, the activities they have stimulated have not helped the river's pre-eminent biological resource: the salmon. The migration of salmon to the upper reaches of the Columbia was blocked totally by the Grand Coulee Dam when it was completed — without fish ladders — in the late 1930s. On its lower reaches, and along the Snake River, where adult salmon are still able to make their way upriver to spawn, the survival rate of their offspring, who have to swim in the other direction, is substantially reduced by spinning turbine blades and water that is too slow and too warm. These obstacles, combined with habitat destruction and overfishing, have diminished the catch of chinook and coho salmon by over 80 per cent in the last two decades, and by over 95 per cent since the first hydroelectric dams were built.

In an effort to ensure that there are still enough salmon to satisfy sport, native and a small commercial fishery, the government's answer for years was to augment the supply of juveniles and to help them around the rough spots. Each year, some 80 million salmon smolts are released into the river system from state and federal fish hatcheries, at a cost of around \$60 million a year. Several more million dollars are spent each year to transport around fifteen million juvenile salmon around a 240 kilometre stretch of the lower Columbia River by barge and by lorry. Whether these actions will in the end preserve wild salmon stocks is hotly debated.

In 1994 the Northwest Power Planning Council adopted an ambitious salmon recovery scheme which called for, among other measures, drawing down reservoirs on the lower Snake River in order to speed the passage of fish to the sea. The plan was and remains controversial, however, not least because it would raise electricity bills, halt barge traffic for two months in every year, and force expensive modifications to irrigation systems. At this point a final decision on whether to go ahead with it has not been taken.

4. Reforming subsidies

Considering the factors working against the reform of entrenched subsidies, the economist Gordon Tullock, writing in 1975, felt compelled to remark:

[I]t is conceivable that simultaneously abolishing all of them [i.e., subsidies] would lead to a net gain for almost everyone. The individual would lose his particular privilege, but would gain from the loss of privileges of other people. ... As to its political practicality, I take it I do not have to explain why I think it is low.

Tullock was perhaps too pessimistic. Within a decade New Zealand had embarked on a bold, and ultimately successful, experiment to eliminate support to virtually all of its primary industries, and to substantially reduce tariffs on many manufactured products. Australia was already moving down that path, though at a more measured pace. Several South American economies carried out similar reforms. Broad-based unilateral reform of subsidies was shown to be conceivable, and not just in theory.

But such comprehensive, economy-wide reforms are much more difficult to carry out by large democracies with diverse constituencies. That does not mean they are not worthwhile pursuing — indeed, over the long term they may be the most enduring. But change may be easier to sell to sceptical voters if the required sacrifices are seen to be shared among other countries, particularly if there are gains (such as gains from trade) that can help offset adjustment costs. Multilateral arrangements, which can offer countries an opportunity to seek out and obtain such trade-offs, have therefore served an indispensable role in subsidy reform.

4.1 Multilateral subsidy disciplines

There are several reasons why countries might wish to enter into agreements to limit their ability to support or protect domestic industries. The most straight-forward motive is to obtain the economic gains that can be reaped through expanded trade. Countries seeking to reduce expenditures may also find it politically safer to have their hands tied by an external authority than to directly resist internal pressures on budgetary resources. Given the current interest in reducing environmentally harmful subsidies, it is instructive to review where things stand currently with regard to multilateral disciplines on subsidies. By way of providing a few examples, the following section looks at those applied to three sectors: agriculture, coal and fishery products.

It is noteworthy that, in all three sectors, subsidies (including tariffs and non-tariff trade barriers) have been subjected to multilateral disciplines in an effort to curb their trade effects, not because of any concern over their effects on the environment (though such concerns may have motivated the negotiating parties as well). Even the latest multilateral initiative, the Asia-Pacific Economic Co-operation (APEC) forum's proposal for early voluntary sectoral liberalisation — which would cover energy, fishery products and agriculture along with 12 other sectors — is focused primarily on trade.^{xxi}

4.1.1 Agriculture

The main multilateral mechanism for disciplining subsidies to agriculture is the “Agreement on Agriculture”, adopted as part of the Final Act embodying the results of the (1986-93) Uruguay Round of multinational trade negotiations.^{xxii} Prior to that agreement, agricultural trade was subject to several general or country-specific derogations or exemptions that, in combination, virtually exempted agriculture from the disciplines that were applied to trade in manufactured products.^{xxiii}

The definitive text of the Agreement on Agriculture (URAA) included detailed schedules of reduction commitments, from each country, in three areas: market access (i.e., concessions that relate to bindings and reductions of tariffs, and to other market access commitments), export subsidies, and domestic support.^{xxiv} With regard to market access and export subsidies, WTO members agreed to reduce tariffs, volumes of subsidised exports, and budgetary expenditures on export subsidies over the course of the six-year (10 years for developing countries, or DCs) implementation period — by an average of 36 per cent (DCs: 24 per cent). Least developed countries (LDCs) were exempted from reduction commitments altogether.

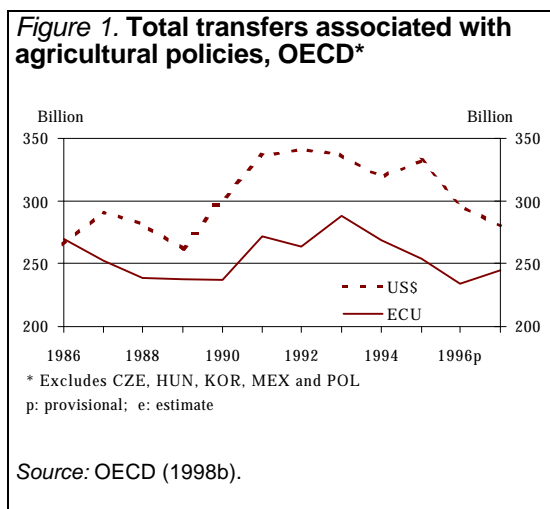
The domestic support reduction commitments of each Member, contained in Part IV of its Schedule, apply to all of its domestic support measures in favour of agricultural producers, with the exception of domestic measures that are not subject to reduction. Domestic support deemed to be non- or minimally trade distorting, and direct payments provided through certain production-limiting programmes, are not included in the aggregate measure of support (AMS). Domestic policies identified in the country schedules as trade distorting — basically, market price support, production-linked direct payments, and input subsidies, expressed in terms of Total Aggregate Measurement of Support — are subject to reduction commitments of 20 per cent (compared with the 1986-88 base period), with credit granted for any reductions that had already occurred since the base period. Developing countries must reduce their Total AMS by 13 per cent over nine years, and LDCs cannot exceed their Total AMS established for 1986-88.

It is generally acknowledged that, as a package, the URAA signalled an important move in the direction of freer trade in agriculture by improving market access and reducing other trade restrictions. However, many distortions remain, with much of the trade in agro-food products still governed by a complex set of tariff quota arrangements and many prohibitive over-quota tariffs.xxv Domestic support measures for which exemption from the reduction commitments can be claimed (detailed in Annex 2 of the URAA) include a wide range of general government-supplied services, such as research, food inspection, marketing and promotion, and “infrastructural services”.xxvi These infrastructural services cover big items in some governments’ budgets — notably, roads and other means of transport, market and port facilities, water supply facilities, (irrigation) dams and drainage schemes, and infrastructural works associated with environmental programmes. While no firm numbers are available on government subsidies to irrigation, the available data suggest they are in the tens of billions of U.S. dollars a year worldwide.xxvii Interestingly, the exemption for infrastructural services “shall not include subsidies to inputs or operating costs, or preferential user charges.” Yet very few such subsidies have been included in country schedules or subsequent notifications.

Despite these shortcomings, has the UR-AA made much of a difference? Yes, especially by making countries tariff their non-tariff trade barriers. Also, it appears that countries are abiding by their commitments to phase out subsidised exports. As for domestic support, it is perhaps too early to discern the net effect of the Agreement. However, a

recent study prepared for a meeting of the OECD’s Agricultural Ministers in March 1998 suggests some positive trends among its own Member countries. To quote from the summary of that paper:

The level of support has fallen for the OECD as a whole but is still high (estimated total transfers of US\$280 billion in 1997 [Figure 1]), with wide variations among Member countries and across commodities. Expressed as a percentage of the value of agricultural production, the Producer Subsidy Equivalent (PSE)



fell from 45 per cent for the 1986-88 period to 35 per cent in 1997. A shift to direct payments has improved market orientation, yet many direct payments are still linked to production or factors of production and supply controls persist.

In addition, some countries have undertaken, or are contemplating undertaking, unilateral domestic policy reforms that go beyond what they have committed to under the URAA.^{xxviii} And most recent bilateral and regional trade agreements have included agriculture to varying degrees. The entry of Austria, Finland and Sweden into the EU in 1995, for example, required domestic and trade policy reforms in the first two countries. The North American Free Trade Agreement (NAFTA) led to a further regional integration of the respective agro-food sectors with significant impacts on policy reform and structural adjustment, particularly in Canada and Mexico.^{xxix}

The URAA was by no means the last word on multilateral efforts to discipline agricultural support. The OECD still monitors its Member countries' agricultural policies (including estimates of PSEs and Total Transfers), and is still engaged in a substantial work programme in the areas of agricultural trade, structural reform and the environment. In March of this year, OECD Ministers of Agriculture reaffirmed their commitment to the long-term goal of domestic and international policy reform. They also reaffirmed their commitment to undertake further negotiations on agriculture, as foreseen in Article 20 of the URAA. Those "negotiations for continuing the process" of reform are scheduled to commence within the WTO's Committee on Agriculture before the end of 1999.

4.1.2 Fisheries

The fisheries sector differs in important ways from agriculture. Nevertheless, from 1947, when the first GATT was signed, until the conclusion of the Uruguay Round in December 1993, fishery products were, like farm products, exempted under Article XI from disciplines on import restrictions. One major difference between the two sectors, however, has been that, unlike agriculture, most of the tariffs on fish and fish products applied by developed countries were bound under GATT before the Uruguay Round negotiations got under way.^{xxx} This tariff binding thus had the effect of denying these countries any possibility of increasing the tariff and non-tariff protection already negotiated.

In the Final Act, fishery products were expressly excluded from the list of products covered by the Agreement on Agriculture, and were presumed to be covered, along with industrial products, by the Agreement on Subsidies and Countervailing Measures (the SCM Agreement). The SCM includes

within its scope several types of subsidies found in the fisheries sector, including border measures, output-related subsidies, subsidies to intermediate inputs and capital, and explicit tax breaks. However, as various observers have pointed out^{xxxii}, it does not seem to include what some have called “implicit subsidies”— uncollected or undercollected resource rents, or the cost advantage conferred by lax enforcement of environmental standards. It is also not clear whether, for instance, exemptions from fuel excise taxes that are also available to other primary producers (e.g., farmers and foresters) would be covered by the code.^{xxxii}

The Uruguay Round did, at least, lead to some decrease in border protection. It has been estimated that more than 90 per cent of world fisheries exports have benefited from trade concessions negotiated during the Round.^{xxxiii} Japan, for example, reduced its tariffs on fish and seafood products by a third. Tariffs on imports — particularly of processed fish products — remain high in some countries, however. Trade-weighted tariff reduction targets, under which fisheries were classified, averaged around one-third, but within that general category some countries chose to reduce tariffs by a smaller proportion for fisheries products and to make up the difference on other products.

Interest in subsidies to the fishing industry has not waned since the conclusion of the Uruguay Round. If anything it has grown. But, increasingly — the APEC initiative notwithstanding — the focus of multilateral discussions is shifting away from purely trade-related issues towards, or at least expanding to include, environmental considerations.

4.1.3 Coal

Coal has not been a commodity that has garnered much attention in the GATT. For the most part, subsidies and government-brokered contracts, rather than border measures, have protected producers in high-cost coal producing nations of the developed world. Many of the major coal producing and trading nations — China, Poland, South Africa and the former Soviet Union — were not contracting parties to the GATT in any case (though Poland and South Africa have since become members of the WTO).

Apart from the general commitments that WTO member countries have made under the SCM, there is no equivalent to the Agreement on Agriculture specifically disciplining coal or any other energy source. Rather, coal subsidies are limited by disciplines within regional free-trade areas and by a specific agreement between Australia and the European Union.^{xxxiv}

The main regional compact limiting coal subsidies is the 1951 Treaty of Paris, which established the six-nation European Coal and Steel Community (ECSC). The ECSC Treaty, developed to create a common market in two products vital to Europe's economic recovery, was a model of liberal-economic thinking. Significantly, not only did the Treaty require free and open trade between its members (though not with the rest of the world), it also prohibited "subsidies or aids granted by States, or special charges imposed by States, in any form whatsoever" (Article 4). After 1965, however, as world prices of competing petroleum products plummeted, the ECSC's High Authority passed a series of "temporary" derogations to the Treaty — effectively allowing national governments to provide budgetary support to their ailing industries.

The European Commission's latest Decision^{xxxv} regarding rules for State aid to the coal industry (covering the period 1 January 1994 through 23 July 2002) dates from December 1993. Besides tightening the conditions under which State aid could be provided, it required that all member states intending to grant operating aid during the period covered by the decision submit a "modernisation, rationalisation and restructuring plan" that "provides for appropriate measures ... to generate a trend towards a reduction in production costs at 1992 prices". Given the economics of coal production in the EU, such a feat could only be accomplished through mine closures. Perhaps even more significantly, the new rules required that, by 1 January 1997, all aid "shall be authorised only if it is entered in Member States' national, regional or local public budgets or channelled through strictly equivalent mechanisms". In other words, market price support, such as had been provided under some member states' arrangements between domestic coal producers and their electric utilities, would henceforth be prohibited.

The adjustments required of domestic coal industries in order to meet the new Community rules for State aid have been painful, especially since the "budgetisation" condition came into force. And the inexorable decline of subsidised coal production is likely to continue. Over the past decade subsidised production of hard coal has ceased in Belgium, Ireland and Portugal, and production in the United Kingdom has fallen by more than half. France is on track to end all support to coal mining by 2005, and Germany and Spain are expected to cut back their production and total support considerably over the same period. Incidentally, Japan, which is not a member of the ECSC, produced around 15 million tonnes of high-cost coal in 1987; last year it produced only 4.3 million tonnes.

Financial support to the coal industry has also become ever harder to sustain as the public becomes more familiar with the environmental advantages of

natural gas and the relatively high rate of carbon dioxide emissions from one gets from burning coal. Meanwhile, the sentimental notions that voters once held for their domestic coal industries — vanguard of the labour movement; supplier of critical materials during industrial development and war — is fading quickly from the collective memory.

5. Monitoring subsidies at the eco-system level: a possible niche for environmental NGOs?

The three experiences described above lead to several observations. First, the process of disciplining subsidies at the multilateral level can take many years, if not decades to bear fruit. Second, such processes have been mainly driven by concerns over trade, government budgets and competition. Third, until recently, the policy agenda has been largely dominated by governments and multilateral institutions.

That situation has changed in two important ways. First, people both inside and outside of governments have begun to take a keen interest in the effects that subsidies may be having on the environment and the management of natural resources. Second, the driving force behind this newly focused attention has often been provided by Non-governmental organisations (NGOs), and other bodies not previously engaged in the subsidies dialogue.^{xxxvi}

As mentioned at the beginning of this paper, within the last five years there has been a virtual explosion of NGO-sponsored studies emphasising the environmentally perverse effects of subsidies to primary industries, and generally calling for their reform. But reform of what kind? Here, the environmental NGOs — or at least the authors of their reports — differ in important ways. For some, reform means the “greening” of subsidies. Subsidies are not suspect *per se*, according to this view; it is just that governments have been giving them to the wrong people. Authors in this camp call for redirecting subsidies from “bad” to “good” activities, such as biofuel production, organic agriculture, and artisanal fishing.^{xxxvii}

Such bald appeals to simply shift subsidies from one set of activities to another are not likely to be taken seriously by trade economists and public finance specialists — the green movement’s natural allies in the cause of subsidy reform — although they do strike a chord with the public. As environmental NGOs develop expertise in the subject, however, their critical analyses are revealing an increasingly deeper scepticism of subsidies, and a more sophisticated understanding of the mechanisms that could be used to discipline them.

That knowledge, if used judiciously, can serve as a check and balance to future efforts to discipline “perverse” subsidies. Generally, any multilateral regulatory regime requires three components: a norm building process; a formal set of legal obligations (or a set of common principals and criteria, in the case of non-binding arrangements); and an apparatus for monitoring and enforcement.^{xxxviii} At this stage in the development of international relations, law-making and enforcement are still privileges of sovereign governments. But in democracies, at least, civil society and the press can and often do influence the norm-building process and contribute to monitoring in an informal way.

Environmental NGOs have recently had, and will continue to have, an influence on regional, national and international dialogues over subsidies. And through their investigative work they will no doubt shed light on subsidy policies that may have escaped the attention of the multilateral institutions formally encharged with monitoring and enforcing. But it is unlikely that national governments will cede these functions to NGOs any time soon. That raises the issue of how many resources NGOs should be devoted to, in a sense, duplicating what will continue to be done by others in any case.

There is, however, a useful niche that NGOs can fill. If recent history is any guide, most multilateral arrangements to discipline subsidies will continue to be framed around specific sectors. While appropriate for addressing trade concerns, such arrangements may not always reveal subsidy “hot spots” — i.e., areas where subsidies to different industries interact in particularly environmentally harmful ways. The IUCN’s current approach to analysing the effects of subsidies on biodiversity from an ecosystem perspective seems to this writer, therefore, an eminently sensible use of NGO resources — complementing the work of multilateral institutions while at the same time providing information that is focused and practical for policy makers at all levels of government.

This activity puts into practice the dictum “think globally, act locally” in that it requires thinking about global institutions and processes, but also research at the local level. Potentially, if the project involves input from local and regional chapters of environmental NGOs, it can provide a vehicle for increasing public awareness and, hopefully, begin to change peoples’ attitudes towards subsidies where it matters most: at the grass roots level. As David Roodman observes, “few public policies are as unpopular and theory and popular in practice as subsidies.” Subsidies persist, in part, because they are seen as a way of transferring tax money back to local taxpayers. The problem is that there is usually a disconnect between who pays and who receives, which encourages the diversion of public money

into dams, roads, ports and other large infrastructure projects even when they are not really needed. Voters have a hard time refusing such “gifts” from their parliamentarians partly out of a sense of equity: if we don’t receive our fair share of the pie, somebody else will. Questions of how the government should be spending its money get pushed aside.

Working to reduce or eliminate environmentally perverse subsidies is not enough, however. Making the transition from dependence on, to independence from, subsidies can be frightening for workers employed in a supported industry. There is therefore an important job to do in educating people and policy makers, not only about the potential long-run benefits of subsidy reform, but also about ways to make the transition to a more sustainable future less painful. Answering the question of “How do we get there from here?” is perhaps as important as identifying where we want to get to.

There are undoubtedly more areas in which organisations such as the IUCN and its member organisations could contribute towards the process of policy reform. What is important is that, clearly, the will to make such a contribution has already been made abundantly evident.

REFERENCES

BELLO, Walden (1998), “High stakes for the 1999 review of the Agreement on Agriculture”, *Bridges Between Trade and Sustainable Development* (published by the International Centre for Trade and Sustainable Development, Geneva), Vo. 2, No. 4, June, pp. 2, 4 and 14. Available on the WWW.

BURNS, Scott, ed. (1997), *Subsidies and Depletion of World Fisheries*, papers prepared for the WWF/UNEP Workshop, Geneva, June 1997.

COOK, Kenneth A., Clark WILLIAMS, Andrew B. Art, Christopher CAMPBELL, Frank SCHIMA (1995), *The Cash Croppers — The Top Two Percent of America’s Farm Subsidy Recipients, 1985-1994*, Environmental Working Group, Washington, D.C.

DEE, Philippa, Alexis HARDIN and Michael SCHUELE (1998), “APEC Early Voluntary Sectoral Liberalisation”, Productivity Commission Staff research Paper, AusInfo, Canberra.

DE MOOR, A.P.G. (1997), *Perverse Incentives: Hundreds of Billions of Dollars in Subsidies Now Harm the Economy, the Environment, Equity and Trade*, The Earth Council, San Jose, Costa Rica.

DE MOOR, A.P.G. and P. CALAMAI (1997), *Subsidizing Unsustainable Development: Undermining the Earth with Public Funds*, The Earth Council, San Jose, Costa Rica.

FAO (1992), "Marine fisheries and the Law of the Sea: a decade of change", FAO Fisheries Circular No. 853 (FID/C853), Food and Agriculture Organization of the United Nations, Rome.

HARDEN, Blaine (1996), *A River Lost — The Life and Death of the Columbia*, W. W. Norton, New York.

KOPLow, Douglas (1996), "Energy Subsidies and the Environment," in *Subsidies and Environment: Exploring the Linkages*, OECD Publications, Paris.

KURLANSKY, Mark (1997), *Cod: A Biography of the Fish That Changed the World*, Penguin Books, Harmondsworth, Middlesex, U.K.

LARSON, Bjorn and Anwar SHAH (1992), "World energy subsidies and global carbon dioxide emissions", World Development Report 1992 (Background Paper No. 25), World Bank, Washington, D.C.

MARSHALL, Alfred (1952[1920]), *Principles of Economics*, 8th edition, MacMillan, London.

McLEOD, Rory (1996), "The New Zealand Seafood Trade Access Project", in Report of Proceedings of the Symposium on *The Interrelationship between Fisheries Management Practices and International Trade* (24-26 November 1996), Wellington, New Zealand.

MYERS, Norman, with Jennifer Kent (1998), *Perverse Subsidies — Tax \$s Undercutting our Economies and Environments Alike*, International Institute for Sustainable Development, Winnipeg, Manitoba, Canada.

MILLAZO, Matteo J. (1998), *Subsidies in World Fisheries — A Re-examination*, World Bank Technical Paper No. 406 (Fisheries Series), The World Bank, Washington, D.C., April 1998.

New Zealand, Ministry of Foreign Affairs and Trade (1994), *Trading Ahead — The GATT Uruguay Round: Results for New Zealand*, Wellington.

OECD (1990), *Reforming Agricultural Policies: Quantitative Restrictions on Production and Direct Income Support*, Paris, OECD Publications.

OECD (1995), *The Uruguay Round—A Preliminary Evaluation of the Impacts of the Agreement on Agriculture in the OECD Countries*, Paris, OECD Publications.

OECD (1998a), *Agricultural Policies in OECD Countries* (Volumes I and II), Paris, OECD Publications.

OECD (1998b), *Agricultural Policy Reform: Stocktaking of Achievements*, Paris, OECD Publications.

OECD (1998c), *Improving the Environment through Reducing Subsidies* (Parts I and II), Paris, OECD Publications.

PORTER, Gareth (1998), “Fisheries Subsidies, Overfishing and Trade”, Environment and Trade Report no. 16, Geneva, United Nations Environment Programme.

PORTER, Michael E. (1990), *The Competitive Advantage of Nations*, The Free Press, New York.

REISNER, Marc (1993), *Cadillac Desert*, Revised edition, Penguin Putnam, New York.

ROODMAN, David Malin (1996), *Paying the Piper: Subsidies, Politics, and the Environment*, WorldWatch Paper No. 133, Washington, D.C.

ROODMAN, David Malin (1998), *The Natural Wealth of Nations—Harnessing the Market for the Environment*, Worldwatch Environmental Allert Series (Linda Starke, ed.), W.W. Norton, New York.

ROSS, Bruce (1996), “Links between renewable resource management and trade—lessons from agriculture”, in Report of Proceedings of the Symposium on *The Interrelationship between Fisheries Management Practices and International Trade* (24-26 November 1996), Wellington, New Zealand.

RUCKES, Erhard (1996), “Fisheries management, subsidies and international trade in fishery products”, in Report of Proceedings of the Symposium on *The Interrelationship between Fisheries Management Practices and International Trade* (24-26 November 1996), Wellington, New Zealand.

RUIJGROK, Elisabeth and Frans OOSTERHUIS (1997), *Energy Subsidies in Europe — How Governments use Taxpayers' Money to Promote Climate Change and Nuclear Risk*, analysis prepared by the Vrije Universiteit for Greenpeace International, Amsterdam.

RUNGE, C. Ford (1994), "The environmental effects of trade in the agricultural sector", in *The Environmental Effects of Trade*, pp. 19-54, OECD Publications, Paris.

RUNGE, C. Ford (1996), "Environmental Impacts of agriculture and forestry subsidies", in *Subsidies and the Environment: Exploring the Linkages*, pp. 139-161, OECD Publications, Paris.

RYAN, John C. (1995), *Hazardous Handouts — Taxpayer Subsidies to Environmental Degredation*, NEW Report No. 2, Northwest Environment Watch, Seattle, Washington.

SCHORR, David (1998), "Towards rational disciplines on subsidies to the fishery sector: a call for new international rules and mechanisms", WWF Discussion Paper (Part 3 of *The Footprint Report*), World Wildlife Fund, Washington, D.C.

SEN, Sevaly (1994), "The environmental effects of fish trade in the fisheries sector", in *The Environmental Effects of Trade*, pp. 103-122, OECD Publications, Paris.

STEENBLIK, Ronald P. (1995), "A note on the concept of 'subsidy' ", *Energy Policy*, Vol. 23, No. 6, June, pp. 483-484.

STEENBLIK, Ronald P. and Panos COROYANNAKIS (1995), "Reform of coal policies in Western and Central Europe", *Energy Policy*, Vol. 23, No. 6, June, pp. 537-553.

STONE, Christopher D. (1997), "Too many fishing boats, too few fish: can trade laws trim subsidies and restore the balance in global fisheries" *Ecology Law Quarterly*, 24(3), 1997, pp. 505-5.

TIDRICK, Steve (1995), "The Budget Inferno — How we could really cut spending. And won't", *The New Republic*, 29 Mat 1995, Issue 4, pp. 17-25.

TULLOCK, Gordon (1975), "The transitional gains trap", *The Bell Journal of Economics*, Vol. 6, pp. 671-678.

WOLFSON, Dirk (1990), "Towards a theory of subsidisation", in *Producer Subsidies* (Ronald Gerritse, ed.), pp. 1-19, Pinter Publishers, London.

World Bank (1997), *Expanding the Measure of Wealth — Indicators of Environmentally Sustainable Development*, Environmentally Sustainable Development Studies and Monographs Series No. 17, The World Bank, Washington, D.C.

WWF International, Endangered Seas Campaign (1998), *The Footprint of Distant Water Fleets on World Fisheries*, WWF International, Godalming, Surrey, United Kingdom. Available on the World Wide Web at: <http://www.panda.org/seachange/fisheries/report.htm>

Notes

ⁱ Principal Administrator, Fisheries Division, Directorate for Food, Agriculture and Fisheries, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France. The views expressed in this paper are the author's alone, and should not be attributed either to the OECD or its Member countries. The very helpful comments and suggestions provided by Doug Koplow, Wilfrid Legg, Frank Vorhies and Paul Wallis are gratefully acknowledged. Needless to say, any errors or omissions are the sole responsibility of the author.

ⁱⁱ In order: de Moore (1997) and de Moore and Calamai (1997); Ruijgrok and Oosterhuis (1997); Myers (1998); Roodman (1996 and 1998); Burns (1997) and WWF International (1998).

ⁱⁱⁱ Influential in this respect have been the OECD's annual estimates of PSEs and total transfers to agriculture — \$280 billion in 1997 (OECD, 1998a and earlier years); the World Bank's \$230 billion estimate of world-wide subsidies to fossil fuel consumption (Larson and Shaw, 1992), and the FAO's \$54 billion estimate of global fishing subsidies (FAO, 1992).

^{iv} See: <http://economics.iucn.org/subsidies.htm>.

^v Roodman (1998), p. 246.

^{vi} For a brief overview of definitions used by inter-governmental organisations, see Steenblik (1995).

^{vii} See, for example, Wolfson (1990) and OECD (1998c).

^{viii} Ross (1996).

^{ix} Cook, *et al.* (1995).

^x OECD (1995).

^{xi} Ross (1996).

^{xii} See Tullock (1976).

^{xiii} The essence of this problem was identified many years ago by Tullock (1976).

^{xiv} See, for example, Kurlansky (1997), pp. 118-120 and 124.

^{xv} Ryan (1995), p. 45. For a sardonic, and fascinating, exposition on the political economy of subsidies to different groups in society, see Tidrick (1995).

^{xvi} See the example in Steenblik and Coroyannakis (1995).

^{xvii} Koplow (1996, p. 201), who first coined the term “subsidy clusters”, meant it as a play on words of Michael Porter’s (1990) notion of industry clusters.

^{xviii} Runge (1996). This is a word play based on the theory, attributed to the 16th century English financier Sir Thomas Gresham (1519-79), that when two or more kinds of money of equal denomination but unequal intrinsic value are in circulation, the one with greater value will tend to be hoarded or exported — i.e., that “bad” money drives “good” money out of circulation.

^{xix} Runge (1994).

^{xx} The author has chosen this example not because it is particularly unusual, but because it has been so well documented. See, in particular, Reisner (1993), Ryan (1995) and Harden (1996).

^{xxi} For an analysis of the trade effects of the EVSL initiative, see Dee, Hardin and Schuele (1998).

^{xxii} The text can be obtained from the WTO’s web site at <http://www.wto.org/wto/legal/finalact.htm>.

^{xxiii} See OECD (1995) and Bello (1998).

^{xxiv} Under Article 14 of the Agreement members also agreed to give effect to the separate “Agreement on the Application of Sanitary and Phytosanitary Measures”.

^{xxv} OECD (1998b), p. 5.

^{xxvi} As well, many government assistance measures provided by developing countries “to encourage agricultural and rural development” were exempted from the domestic support commitments that would otherwise be applicable to such measures. These exemptions cover, in addition to the exemptions available to developed countries, investment subsidies that are generally available to agriculture, and agricultural input subsidies generally available to low-income or resource-poor producers.

^{xxvii} See, for example, World Bank (1997), pp. 58-62.

^{xxviii} For example, in 1997 Australia abolished all tariffs on raw sugar.

^{xxix} OECD (1998b).

^{xxx} Sen (1994) claims that, prior to the conclusion of the UR Agreements, approximately 80 per cent of tariffs levied on fish and fish products were GATT bound.

^{xxxi} Stone (1997); see also Milazzo (1998) and Porter (1998).

^{xxxii} Porter (1998), p. 40.

^{xxxiii} New Zealand, Ministry of Foreign Affairs and Trade (1994).

^{xxxiv} On 15 December 1993 to Australia (the world’s leading coal exporter) and the European Commission (on behalf of the European Union, the world’s leading coal importer) signing an Agreement on Coal, under which the Community committed to a standstill in subsidised coal production, in return for a commitment by Australia not to challenge the Community’s new coal subsidy scheme. The Agreement was reviewed again in 1998, considered satisfactory by both parties, and will be reviewed again before then end of 2000.^{xxxiv}

^{xxxv} Decision No. 3632/93/ECSC of 28 December 1993 establishing Community rules for State aid to the coal industry, *Official Journal of the European Communities*, No. L. 329, 1 December 1993, pp. 12-18.

^{xxxvi} In the past, of course, pressure groups in general (particularly trade unions), certainly played important roles, but mainly on national stages. Also, national organisations, such as the Sierra Club and the Natural Resources Defense Fund in the United States, and the Royal Society for the Protection of Birds in the United Kingdom, have long taken an interest in government policies favouring natural resource based industries, particularly mining, large-scale agriculture and deep-sea fishing.

^{xxxvii} Consider, for example, the following extract from the forward to Greenpeace International's study on European energy subsidies (Ruijgrok and Oosterhuis, 1997): "The EU and European governments should prioritise the elimination of subsidies promoting the fossil fuel and nuclear industry [and] ... *transfer of these funds to programmes to accelerate the commercialisation of solar renewable energy technologies and energy conservation.*" [emphasis added].

^{xxxviii} Schorr (1998), p. 158.