

Environmental Management in the Amazon Region :

Why Not Try Market Based Instruments ?

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1. Introduction

Although some efforts to the contrary exist , the pace of environmental destruction in the Amazon is still very high. Today , natural resources are not only depleted by deforestation , fire , cattle ranching and over-exploitation but the natural environment is increasingly being destroyed by a much more insidious urban and industrial pollution.

It is therefore common sense to say that more than ever , the environment has to be well managed if we want to stay living on this planet . It is unfortunately less common sense to say that there is an inseparable link between environmental management and sustainable development , especially in a developing country context. It has taken more than three years for the major stakeholders of the Natural Resources Policy Programme (NRPP) of the G7 Pilot Programme to Conserve the Amazon Rain Forest (PP/G7) to recognise that evidence. And even today , some major players in this Pilot Programme are not fully convinced. This unfortunate situation has led the NRPP project designers to over-emphasise classical coercion instruments as environmental management tools at the expense of new and more innovative economic instruments. Another major problem which made it impossible to adequately implement this mega-environmental project is that the NRPP is (was) a protectionist project which restricts the environment to its fauna and flora and does not see it as a real ecosystem in which of course human beings have a role to play.

It might therefore be useful to remind environmental managers that there are two major categories of environmental management tools. Neither of which should be exclusive of the other ; each of which could be an excellent complement to the other.

2. Command and Control Instruments (CCI)

CCIs are the classical environmental tools being used in the Amazon region and within the NRPP in particular. It includes the setting up of an adequate and efficient legal framework , the well known and classical control instruments to make sure that the legal framework is enforced , environmental monitoring to closely follow some important parameters and eventually , a zoning exercise.

One has to recognise that , so far, these tools have had very little impact on the ground. In many places , the lack of political commitment to environmental conservation is the major problem. But there are many other reasons. One of them is the serious shortage of technical skills needed to use such complex tools . Another reason is the inadequacy , not of the tool itself , but of the way it is being used. Centralised monitoring will never be efficient in such a huge region. Vague environmental legislation are useless for public prosecutors. They are also constrained by the dramatic shortage of scientific instruments and knowledge to bring irrefutable evidence of law violation to the courts. A bunch of, however motivated and courageous, under-equipped environmental policemen will never be able to cope with the situation. A top-down ecological/economic zoning exercise will never convince the local communities to abide by it.

Command and Control Instruments have proved to be a very big consumer of qualified human resources which is actually what is missing most in the region . They also require very strong and well organised institutions which is another weak point in the Amazon .Finally, there is no doubt that they will require huge financial resources , which is another problem in all developing countries or regions. The informational requirements of these tools are completely out of scale with the local

capacities. Local resources are scarce . Today , the implementation of CCIs in the nine States of the Legal Amazon is being " subsidised " by the PP/G7. Just as an example , the budget of the NRPP Integrated Environmental Management Project (PGAI) of Amapá is about five times the annual budget of the local State Environmental Institution (Sema). And the PGAI is limited to a small pilot area in the South of the State.

If Amapá were to implement similar policies on a full State level , it would cost the Sema about 20 times its annual budget , just to put the system in place , not even to mention the maintenance cost ! Who is going to pay for that when or if the international donors leave ?

One way to reduce the cost of CCIs would be to decentralise control and monitoring activities and to work in a much more participatory and integrated way. But experience has shown that this is really difficult and would take a long time to set in place.

This is not to say that these instruments are not needed. They are and this is why we are working here. But they are not a panacea and maybe they have been dominating the scene too much, hiding other potentially interesting and efficient tools. I am not saying here that this situation is typical of Brazil nor of developing countries. CCIs are also predominant in Europe , the United States and Japan. But the situation is changing, hopefully towards a more balanced approach.

3. Market Based Instruments (MBI)

MBIs are a (relatively) new generation of environmental management instruments which appeared in the United States and Europe during the seventies. Initially , they generated harsh concerns and much controversy amongst many. Traditional environmentalists were concerned that the economic arena was invading the environmental field. Traditional economists were concerned about the idea of valuing common goods like air , water and even immaterial goods like landscape etc.

Since then , a slow but continuous evolution has taken place. The number of applications for MBI has increased as well as the type of instruments. The first one to appear was the simple user charges (on water) and subsidies . Today , there is a full range of instruments well conceived and adapted to modern realities.

In most countries , this primary function is still to raise funds for public budgets. This is good and bad. Bad if the funds raised are applied to finance activities which are not related to environmental conservation or pollution control. In this way, it would act as a perfect perverse incentive for fund raising institutions : the more there is pollution , the more they can raise funds for whatever department !

It is potentially very good if the funds are used to sustain the huge financial requirements to implement CCI. One of the weaknesses of the CCI is that it costs a lot of money but does not raise any. MBI are ideal to supplement CCIs in that sense.

If funds are used for institutional strengthening activities , training activities , monitoring improvements etc.. , the logic becomes : the more there is pollution , the more we have funds to control it efficiently. Funds raised by MBI could also be used to subsidise good environmental initiatives. But they should not be seen as mere fund raising instruments. MBI have the potential to induce behavioural changes and motivate industrialists to go further than legal minimum environmental pollution requirements.

In huge countries like Brazil , where there is an enormous heterogeneity of environmental but also cultural , social and economic situations , flexible environmental economic instruments can much more easily accommodate this heterogeneity and diversity than rigid environmental and standardised (cfr, NRPP) control and command instruments. There has been a permanent debate within the NRPP on the insistence of some central project authorities to consider the Amazon as a uniform region in which the programme had to be implemented at the same pace and the same way. From the very beginning of the programme , the DFID technical cooperation in the States insisted that the Legal Amazon is a very diversified region within which each State deserves specific treatment. Although this reality is now broadly accepted , it is not yet clear how to adapt the programme to each State.

Economic instruments also have a role to play in promoting sustainable development (UNEP, 1997). They help internalise environmental costs and promote full-cost pricing policies which is the starting point of any sustainable development. Another role is using the funds raised to invest in socio-economic projects , recuperation of depleted areas, training , reforestation of watersheds, soil conservation etc.

Of course , MBIs have to be well regulated if they want to be efficient. Doing this is not easy and requires a lot of well qualified human resources like lawyers ,economists and environmental economic valuation specialists to be put in place. They would be useless without a good set of regulations and an efficient legal system. But once they are in place , MBIs are supposed to be more-or-less self enforced. Because they operate through incentives rather than through coercion , MBI tend to be less demanding on human resources and institutional capacities. This does not mean that there is no need for monitoring and control but certainly much less than for the CCIs. Furthermore , there should be no need to create new institutions for that purpose but one could easily use and further strengthen the existing ones. The State's Rural Extension Institutions and the Environmental Police could play a leading role in this. Providing it does not add much to their work and responsibilities without bringing any financial benefit, municipalities could become key actors in this process.

3.1. **Typology and definition** of most common Market Based Instruments (OECD, 1998)

- Emission charges : direct payment based on the measurement of estimation of the quality and quantity of a pollutant.
- User charges : payment for the cost of collective services. For example , charges for the collection and treatment of solid waste, charges on sewage water , charges on hazardous waste , charges on aircraft noise, charges on air pollution etc. (pollution control) . When they are used for natural resources management , they are usually called user fees. For example for access to national parks , to hunting or fishing facilities.
- Product charges : applied to products that create pollution either through their manufacture, consumption or disposal (fertilisers, batteries, pesticides). The aim of this charge is to put a real price on the product to include its collection, disposal and treatment.
- Taxes for natural resources management are payment for their use. They are also sometimes called Royalties.
- Marketable (tradable, transferable) permits, rights, quotas : also called emission trading. Are based on the principle that any increase in emission or in the use of natural resources must be

offset by a decrease of an equivalent , or sometimes greater , quantity. Two broad types of tradable permits system are actually in operation :those based on emission reduction credits (ERCs) , and those based on *ex ante* allocations ("cap-and-trade").

- ERCs takes a "business as usual" approach scenario as the starting point and compares this baseline with the actual performance. If the pollution emitter performs better than the anticipated baseline , a "credit" is earned. This credit can be either used by him or sold to another emitter whose emissions are higher than the accepted baseline.
- The "cap-and-trade" approach sets an overall emission and use limit (the cap) and requires all pollution emitters to acquire a share of this total before they can emit. Shares may be given free of charge by an environmental agency or auctioned. Their owners can either utilise them , save them for later use or trade them.
- Deposit-refund system : payment made when purchasing a product . The payment (deposit) is fully or partially reimbursed when the product is returned to the dealer or a specialised treatment facility.
- Non-compliance fee: imposed under civil law for polluters who do not comply with environmental or natural resources management requirements and regulations. They can be proportional to selected variables such as damage caused by non-compliance , profits linked to reduced non-compliance cost, etc.
- Performance bonds : used to guarantee compliance with environmental or natural resources requirements , polluters or users may be required to pay a deposit in the form of a bond . The bond is refunded when the compliance is achieved.
- Liability payments : payment made under civil law to compensate for the damage caused by a polluting activity. Such payments can be made to victims or to the government. They can operate in the context of specific liability rules and compensation schemes , or compensation funds financed by contributions from potential polluters (funds for oil spills , funds for chemical pollution).
- Subsidies : all form of explicit financial assistance to polluters or users of natural resources, e.g. grants, soft loans, tax breaks, accelerated depreciation, etc. for environmental protection.

This list is of course not exhaustive and specific instruments that better respond to the needs of the Amazon reality (deforestation, fires, over-fishing, hunting, ...) could be created.

Table 1 and 2 below give you an example of economic instruments used in selected OECD countries.

Table 1. General overview of the use of economic instruments for natural resources management in selected OECD countries

COUNTRY	Water Quality	Fisheries	Forestry	Wetlands	Land/soil	species/wildlife
Australia	•	•				•
Austria	•		•		•	•
Canada		•				
Canada (Quebec)		•	•	•	•	•
Czech Republic	•		•		•	•
Denmark	•		•	•	•	•
Finland		•	•		•	•
France	•		•		•	•
Germany	•					•
Greece	•				•	•
Hungary	•	•	•		•	•
Iceland		•	•		•	•
Italy	•					
Japan	•					•
Korea			•			•
Mexico	•					•
The Netherlands	•	•	•		•	•
Poland	•		•			•
Sweden	•	•	•	•	•	•
Switzerland			•	•	•	•
UK	•		•	•	•	•
US		•		•	•	

Adapted from OECD doc. ENV/EPOC/GEE (98) 35/REV1/FINAL

Table 2 : General overview of the use of economic instruments for pollution control, in selected OECD countries.

COUNTRY	Charges	Tradable permits	Deposit-refund system	Non-compliance fees	Performance Bonds	Liability payments	Subsidies
Australia	•	•	•		•	•	
Austria	•		•			•	
Belgium	•						
Canada (Quebec)	•		•		•	•	•
Czech Republic	•		•	•			•
Denmark	•	•	•			•	•
Finland	•		•			•	•
France	•	•					•
Germany	•					•	
Greece	•			•			•
Hungary	•		•	•			
Iceland	•		•				
Italy	•		•				
Japan	•					•	•
Korea	•		•	•			
Mexico	•		•				
The Netherlands	•		•				•
Norway	•		•	•			•
Poland	•	•	•	•			•
Sweden	•		•	•		•	•
Switzerland	•	•					•
Turkey	•		•	•		•	•
US	•	•	•		•	•	•

Adapted from OECD doc. : ENV/EPOC/GEEI(98)35/REV1/FINAL

Data on economic instruments used in developing countries are much more difficult to gather. In many developing countries, these instruments are still at a very embryonic stage. In many cases, they are perceived as anti-social and primarily affecting the poor. For example taxes on water and electricity. This is a wrong perception. The water taxes often hit much more the wealthy big water consumers than the poor users. The same applies on energy taxes. The problem is that the funds raised on charging the big consumers are not used to support sustainable and poverty alleviation activities or projects.

Another complaint about economic environmental management instruments is that they affect the competitiveness of industries. This is more of a political problem. Shall any kind of development be allowed on the ground that economic development is above everything. If we keep "developing" the way we do today, there might well be no development at all in the future! On the other side, there should be mechanisms to compensate for the economic cost of environmental protection. In other words, there should be incentives for good behaviour.

4. Incentives

An incentive is any kind of element, material or immaterial, which is intended to affect the rational behaviour of economic, social or cultural agents in front of pre-determined situation.

Incentive measures are very important tools for nature conservation and are present in all four biodiversity related international conventions (CITES, Biodiversity, Ramsar and Climate change).

For example, the Conference of the Parties (COP4 - May 1998) of the Convention on Biological Diversity (CBD) reaffirms its interest to all kinds of incentives in its decision IV/10^a which reads:

" The Conference of the Parties,

Reaffirming the importance for the implementation of the convention of the design and implementation by the Parties and Government of economically and socially sound measures that act as incentives for the conservation and sustainable use of biological diversity,

Recalling its decision III/8 on incentive measures,

Recognising that incentive measures should be designed using an ecosystem approach and with the targeted resource management audience in mind,

Recognising that economic valuation of biodiversity and biological resources is an important tool for well-targeted and calibrated economic incentive measures,

1. Encourages Parties, Government and relevant organisations:

- To promote the design and implementation of appropriate incentive measures, taking fully into account the ecosystem approach and the various conditions of the Parties and employing the precautionary approach of Principle 15 of the Rio Declaration on Environment and Development, in order to facilitate achieving the implementation of the objectives of the

Convention and to integrate biological diversity concerns in sector policies, instruments and projects;

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 - To take into account economic, social, cultural and ethical valuation in the development of relevant incentive measures;
 - To develop supportive legal and policy frameworks for the design and implementation of incentive measures;
 - To carry out participatory consultative processes at the relevant level to define clear and targeted-oriented incentive measures to address the identified underlying causes of biodiversity reduction or loss and unsustainable use;
 - To identify perverse incentives and consider the removal or mitigation of their negative effects on biological diversity in order to encourage positive, rather than negative, effects on the conservation and sustainable use of biological diversity;
 -
5. Requests Parties to include information on the design and implementation of incentive measures in their second national reports;
 6. "

An incentive could therefore be a policy or a law (immaterial) but it can also be money in the form of a subsidy. This paper does not have the pretension to review all kinds of MBIs or incentives but will rather focus on subsidies.

There are many definitions of subsidy. The OECD definition seen above stresses " all forms of explicit financial assistance to .. ". Other authors like Steenblich (1998) stress the objective which is the change in behaviour and define subsidies as measures provided by government to the private sector which encourages certain behaviour.

Economists tend to define subsidies through their pricing aspect and define a subsidy as " any measure that keeps prices for consumers below the market level or keeps prices for producers above the market level, or that reduces costs for consumers and producers by giving direct or indirect support " (De Moor and Calami , 1997).

Unfortunately , subsidies are often used as a political tool or reward to political followers. In this case, their economic aspect is much less relevant.

Whatever the definition , subsidies can either be good or bad , according to their effect on the environment or the economy.

5. Perverse Subsidies

Bad subsidies are called perverse subsidies. Some subsidies have very good intentions - water subsidies to help the poor- but have very negative effects in the long run (over-irrigation

leads to water shortage and price increase) and are helping the wealthy much more than the poor (they benefit more from public funds than the poor).

Some environmental economist argued that all subsidies are bad *per se* and should be removed. This is a very puritan view and would only be feasible if all are removed at the same time so as to avoid strong market distortion. This would also require that an extensive and rigorously applied cost internalisation policy be put in place everywhere at the same time . Failure to do so would have severe adverse effects on the environment A more realistic view would be, in the first instance, to eliminate all perverse incentives but agree on incentives that promote good environmental practices or environmental conservation. Concomitantly, economic and environmental institutions should work on implementing full cost pricing policies on a much broader scale. This will require a serious priority setting exercise and have to take good care on the potentially negative direct side effects on the poor. Compensation measures must be taken.

NGOs attending the WTO meeting in Seattle have been campaigning hard against perverse subsidies. The WWF made a strong call to remove fishing subsidies that do enormous damage to the health of the international economy as well as to the local economies of coastal communities on every continents. But on the other side, the Director General of WWF-International (WWF) was very clear in saying that the organisation“ does not oppose government support for fishing activities *per se*. On the contrary, in many cases, government involvement is necessary to help achieve fisheries and fishing industries that healthy and sustainably managed .”. The WWF specially supports legitimate government involvement in developing countries.

In Brazil , three sectors are very heavily subsidised : transport, energy, water.

Bagri, Blockus and Vorhies (1999), identify five reasons that make subsidies bio-diversity perverse :

- Subsidies often encourage behaviours which lead directly to biodiversity loss.
- Subsidies drain scarce public finances which could have been used to conserve biodiversity.
- Subsidies are frequently blunt instruments which may undermine critical linkages between ecological, economic and social objectives.
- Subsidies often favour well-connected groups while putting less influential groups - many of whom are dependent on biological resources - at a disadvantage.
- Subsidies may lock in a biodiversity-unfriendly structure of political and power relationships.

It is often recognised that , as an average , 80% of the subsidies given to the agricultural sector goes to the 20% of the wealthiest farmers. On a long term view , subsidies are also jeopardising the future use of natural resources. They are used for present users who tend to deplete these resources , making them much more expensive for the users of tomorrow.

An exhaustive list of perverse subsidies would take hundreds of pages. We will therefore limit ourselves to just a few significant examples :

In many severely indebted Sahel countries, like Benin, International Finance Institutions , supported by Donor agencies , have promoted and financed (subsidised) export crops to raise the necessary hard currencies needed to repay their heavy debts. Cotton (good price, good demand) was one of them. By doing so , the subsidisers have destroyed a big part of the traditional social tissue. At the same time, they have seriously affected the very fragile local ecosystems.

In this region, traditional people used to grow maize and sorghum, two local crops. After the crop , local cattle would come on the fields and eat the remaining stems and as a good return practice, leave their by-products on the ground re-fertilising the soil for the next crop.

They have now been pushed to grow cotton, a pest sensitive crop which has to be sprayed with strong insecticides up to seven times during the season. This has led to chemical pollution of both water and soil. It has also poisoned the honey produced by bees pollinating cotton flowers. To worsen the situation even further, cattle do not eat tough cotton stems and therefore do not leave anything on the ground in return. The nomadic Peuhl people do not find places to feed their cattle anymore and start invading local protected areas where grass and water are still relatively abundant or alternatively, they invade agricultural plots. Conflicts increase.

The next crop does not grow without imported chemical fertilisers, first subsidised by the Donors and later, increasing the dependency of local agriculture on expensive imported fertilisers at a time when a strong increase of the offer of cotton on international markets led to a decrease on prices and consequently an increased indebtedness of local producers. In its turn, the fertilisers pollute the very fragile aquatic layer. And here starts the infernal spiral ...

Another example is related to water subsidies. Easy to understand that when the water is cheap, you do not mind using more of it, even wasting some. At the agricultural level, this means that millions of litres of water are used for irrigation without much concern on the price nor the necessary technology to make the irrigation process more efficient. Under-pricing or subsidies leads to overexploitation: the bigger you are as a farmer, the more you need water. If water management practices and policies are not adapted very urgently, the soya boom in the Pantanal region and the North East of Brazil will lead to dramatic shortages of water and serious river pollution. It might also lead to soil erosion and salinisation. Those who will pay for that in the end, are the local poor people who will not find water anymore for their daily subsistence and will not have sufficient means to buy water elsewhere.

In Maranhão, city planners are starting to worry about more rivers drying up, affecting water supply for the city of Sao Luis and therefore millions of people, including the wealthy.

Subsidies on sugar cane gas fuel in Brazil had an initial good intention: be as little dependent as possible on outside fuel. This is a very legitimate goal. But the negative side effects of this programme are huge and today, poor people from the North East region where sugar cane plantations were flourishing are paying the price for it.

First, millions of hectares of native Atlantic forest have been destroyed to plant sugar cane. The loss in biological diversity is incalculable. Hundreds of animals and plants have disappeared. The loss of forest or biological diversity is often balanced against the improvement of living conditions through jobs. But a short trip in the region is enough to see that the sugar cane industry did not bring any wellbeing to the local poor at all. Like tens of years ago, they are still living in almost sub-humane conditions. Today, water is scarce, soils are heavily degraded, the sugar cane gas market is about to disappear, sugar prices are very low on international markets, there is no forest left for fishing, hunting or agro-forestry, there is no agricultural culture anymore and anyway, the land tenure system does not allow the poor to own a plot of land to cultivate. And many factories are closing their doors. And of course, those who were harvesting the canes could never afford to have a car whether gas propelled or not. We are not saying here that subsidies are the only cause of poverty in the region. The reality is much more complex but subsidies did not help the poor at all and seriously hampered the potential for a more sustainable use of natural resources.

The three examples mentioned above are not exhaustive. There are many more subsidies that damage the environment and do not have the positive economic impact they pretend: subsidies on energy, for industries, for agriculture, for transport, for fuel, for forest exploitation, for cattle breeding, for wetland reclamation, for fishing etc...

Some times, subsidies compete one against the other: subsidies on water prices and subsidies on sustainable agriculture or subsidies on watershed management; subsidies for fertilisers and

subsidies for sustainable agriculture; subsidies for sustainable forest management and subsidies for timber industries etc.

6. Necessary Subsidies

Other subsidies are really needed and help conserve nature or promote sustainable development.

The Convention on Biological Diversity requests in its article 11 that " Each Contracting Party , as far as possible and as appropriate adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity" (IUCN, 1994). In requesting this , the convention explicitly recognises that traditional Control and Command Instruments have not been sufficient for conserving the level of biological diversity required for the welfare of society.

Below, we are giving examples of good subsidies for both pollution control and natural resources management.

- The Danish Government allocated 94 million Danish crone since 1998 to finance (grants) 255 projects environmentally sustainable development activities and changes in life style.
- The same government allocates more than 77 million Danish crone every year to promote development and demonstration of cleaner products and waste recycling projects.
- The Japanese Government 33.9 billion Yen for 15 new construction or relocation of installation that reduces pollution. Payment are either grants or very soft loans.
- In 1998, the same government spent 450 million Yen to support truck operators that induce the use of lowest emission trucks
- The Netherlands Government supports (0.18 million Dutch Florin) projects to promote clean processing of waste from the fishing industries.
- The Swedish Government grants funds for projects that support the handling of oil waste from ships by harbour. It also supports projects (grants, soft loans) that promote the use of bio-fuel and reduces the emission of hazardous substances from fuel tanks in houses.

Economic instruments are also used for natural resources management in the following sectors : water quality, fisheries, forestry, wetlands, land and soils, natural species and wildlife.

- The Government of Denmark has received 1600 applications by forest private owners for grants to improve forest stability, health, productivity and biological diversity - 110 million Danish Crones have been allocated for these projects.
- The Government of Finland put aside 15 million Finish Crones to compensate forest owners for activities that encourage bio-diversity, landscape values and multiple use.
- The authorities of The Netherlands budgeted 9.4 million Dutch florins for enlargement of forestry area on agricultural lands – Up to 5000 DFL/ha can be granted for planting activities and 1500 DFL/ha for compensating loss of income, dependent on species.
- In Sweden, 45 million Swedish Crones will be used for grants to private forest owners and farmers to finance habitat protection and liming.
- In Denmark again, 100 million Danish Crones will be used for the restoration of wetlands.
- As part of a broader EU programme, another 51 million Danish Crones will be used in the form of grants to promote environmentally friendly agriculture.
- In Switzerland, grants will be available for farmers to protect wetlands from consequences of intensive farming of adjacent “litter” meadows .

- The UK authorities allocate grants to farmers for the maintenance of salt marshes.
- In Canada, 1 million Canadian dollars have been granted to farmers for the conservation of soils and water resources.
- About 163 million French francs have been allocated by the French government in 1995 in the form of subsidies to promote tourism activities in mountains.
- The Greek government finances up to 80% of the cost of waste facilities on farms for the protection of water quality.
- The Swiss government subsidises livestock production methods respecting the environment.
- The UK government subsidises farmers who protect nitrate sensitive areas and drinking water sources.
- The Czech government subsidises the support of endangered species.
- In Finland, 80 million Finish Narks have been used in 1999 to compensate for financial losses due to nature conservation and for damaged caused by protected species.

In Amapá, the State government subsidises the processing of natural resources *in situ*. Since 1998 the COMARU extractive co-operative have been producing Brazil nuts biscuits in the Iratapuru Sustainable Development Reserve. The government believes that improving forest people's living conditions is a good way to have them better conserving their forest and therefore subsidises both the building of micro-enterprises and the commercialisation of biscuits.

7. Ecosystem approach to subsidies.

The Conference of the Parties (COP) of the Convention on Biological Diversity (CBD) has recommended to adopt an ecosystem approach for subsidies. The main advantage of this approach is that it allows us to easily find the conflicting subsidies.

For example, a subsidy for cattle ranching will most certainly compete with a subsidy on reforestation. Or a subsidy on tourism will compete against another subsidy on coastal zone/mangrove protection.

No doubt a subsidy on water consumption will compete with a subsidy in drylands ecosystem protection.

Table 3 below show how to structure this kind of approach.

Economic Sectors	Indicative Ecosystems					
	Drylands	Grasslands	Forests	Inland waters	Marine & coastal	Mountains
Agriculture						
Energy						
Fisheries						
Forestry						
Housing						
Mining						
Retail						
Tourism						
Transport						

8. Proposal for the Amazon

Market Based Instruments will not be easy to implement in the Amazon and they will not be very useful if they are only implemented in one or two States. The ideal situation is to apply an Amazon wide approach to it.

- We would therefore suggest that a working Group on MBIs be created within the Ministry for the Environment to start looking at the potential for these instruments in the Amazon and eventually start promoting the most promising one in the region.
- We would also suggest that an in depth research be committed on perverse incentives in the Amazon and solutions be identified to start removing them
- Because these instruments are complementing the more classical Command and Control Instruments, we would also suggest that this work be closely associated to the work of the Natural Resources Policy Programme (NRPP) of the PP/G7
- The World Conservation Union (IUCN) has some interesting experience world wide on these instruments and has been requested by the 171 Parties to the Biodiversity Convention to “ prepare, in collaboration with the Organisation for Economic Development and Cooperation (OECD) and other relevant organisations, a background paper containing further analysis of the design and implementation of incentive measures ... and to describe, in this document, ways and means to identify perverse incentives and possibilities to remove or mitigate their negative effects on biological diversity”. We would therefore also suggest that a close working relationship be established with the IUCN Economic Unit to learn fro each other and to avoid duplicating work.

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