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### SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE

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Item 4.6 of the provisional agenda\*

### **INCENTIVE MEASURES (ARTICLE 11): INFORMATION AND GOOD-PRACTICE CASES FROM DIFFERENT REGIONS ON THE IDENTIFICATION AND REMOVAL OR MITIGATION OF PERVERSE, AND THE PROMOTION OF POSITIVE, INCENTIVE MEASURES**

*Note by the Executive Secretary*

#### **EXECUTIVE SUMMARY**

1. The present note contains a condensed version of the report of the International Workshop on the Removal and Mitigation of Perverse, and the Promotion of Positive, Incentive Measures, convened pursuant to paragraph 6 of decision IX/6 of the Conference of the Parties and held in Paris from 6 to 8 October 2009, with the financial assistance from the Government of Spain. The Workshop was hosted by the Division of Technology, Industry and Economics of the United National Environment Programme (UNEP-DTIE). The Workshop was tasked with collecting, exchanging and analysing information, including case-studies on, good practices for, and lessons learned from, concrete and practical experiences in identifying and removing or mitigating perverse incentive measures, and in promoting positive incentive measures, and to identify a limited number of good-practice cases from different regions. In analysing the information provided, the Workshop made a number of observations, and identified conclusions and consolidated lessons learned. The full report of the Workshop will be made available to participants in the fourteenth meeting of SBSTTA as an information document.

2. On identifying and removing or mitigating perverse incentives, the workshop made observations related to: (i) the general importance of environmentally harmful subsidies among perverse incentives; (ii) the regionally uneven distribution of subsidies and their effects; (iii) the effects of subsidies on world market prices; (iv) the international dimension of subsidy reform, with reference to the Doha work programme of the World Trade Organization (WTO); (v) the opportunities to reforming environmental harmful subsidies both in OECD and non-OECD countries; (vi) the need for holistic assessments of subsidies addressing the complex relationship between subsidy programmes and the surrounding institutional and policy framework; (vii) the need to enhance transparency and highlight the evidence; (viii) the role of political interventions as a barrier to subsidy reform; (ix) the need to consider scale and social implications; and (x) the use of subsidies for environmental purposes.

\* UNEP/CBD/SBSTTA/14/1.

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3. The workshop concluded that there are ample opportunities for identifying and removing or mitigating perverse incentives, both in developed and in developing countries, which could make a critical contribution to reducing the current rate of biodiversity loss. The consolidated lessons learned identified by the workshop address: (i) the social implications of subsidy reform; (ii) the role of transparency; (iii) the role of leadership and stakeholder engagement; (iv) the need for more complete data and analysis; (v) the need for better communication and coordination.

4. On promoting positive incentive measures, the workshop made observations related to: (i) the role of economic instruments as a source of revenue for positive incentive measures; (ii) the role of economic valuation and complementing national accounts for the calibration of positive incentive measures; (iii) the need for capacity-building and training; (iv) the importance of gender awareness; (v) the coverage of payments for ecosystem services programmes (PES programmes); (vi) limitations of PES programmes in poverty alleviation; (v) limitations of offset programmes; (vi) balancing conservation and sustainable use objectives with livelihood development in implementing community-based natural resource management; (vii) opportunities and limitations of business-driven activities.

5. The consolidated lessons learned identified by the workshop addressed direct incentive measures, including PES programmes, and community-based natural resource management. On positive incentive measures, the workshop identified consolidated lessons learned related to: (i) the need for long-term financial sustainability; (ii) the need to build institutions and trust; (iii) the relationship between the provision of positive incentive measures and the removal or perverse incentives; (iv) the need to understand the life choices of local communities; (v) ensuring no loss of income; (vi) the need to take equity and gender considerations into account; (vii) the need to take into account the risk of lack of additionality and of leakage, as well as the risk to create perverse incentives; (viii) the need for a regular review of positive incentive measures.

6. On community-based natural resource management, the workshop identified consolidated lessons learned related to: (i) the role of community participation as a long-term commitment; (ii) the importance of sustaining inputs; (iii) the need for tangible and appropriately tailored and scaled benefits; and the importance of recognizing the role of local communities as traditional resource managers.

7. The Workshop identified a limited number of good-practice cases from different regions, using criteria related to: (i) contribution to conservation and sustainable use of biodiversity; (ii) example of positive practice and innovation; (iii) replicability.

### **SUGGESTED RECOMMENDATION**

The Subsidiary Body on Scientific, Technical, and Technological Advice may wish to recommend that the Conference of the Parties at its tenth meeting adopt a decision along the following lines:

#### *The Conference of the Parties*

1. *Welcomes* the work of the international workshop on the removal and mitigation of perverse, and the promotion of positive incentives, held in Paris, from 6 to 8 October 2009; and *expresses its appreciation* to the Government of Spain for providing financial support in convening the workshop, to the United National Environment Programme (UNEP) for hosting the workshop, and to IUCN – the World Conservation Union and UNEP for providing support to the write-up of the good-practice cases;

2. *Takes note* of the information, including lessons learned, and the compilation of good-practice cases from different regions on the removal or mitigation of perverse incentives, and the promotion of positive incentive measures, identified by the international expert workshop, as contained in the note by the Executive Secretary on the subject submitted to SBSTTA ( UNEP/CBD/SBSTTA/14/17);

3. *Requests* the Executive Secretary to disseminate the lessons learned and good-practice cases through the clearing-house mechanism of the Convention and other means;

4. *Invites* Parties and other Governments, as well as relevant international organizations and initiatives, to take the lessons learned and the compilation of good-practice cases into consideration as voluntary guidance in their work on the identification and removal or mitigation of perverse incentives, and the promotion of positive incentive measures for the conservation and sustainable use of biodiversity, while *emphasizing* that any collection of good-practice cases is, by necessity, not comprehensive, and that the absence of a particular case from such a collection does not imply that such a case could not also be considered good practice;

5. *Recognizing* that perverse incentives are harmful for biodiversity while frequently being not cost-efficient and/or not effective against social objectives, *urges* Parties and other Governments to prioritize and significantly increase their efforts in actively identifying and removing or mitigating existing perverse incentives, and to take into account, in the design of new incentive measures, the risk of generating perverse effects for biodiversity;

6. *Invites* Parties and other Governments to promote the design and implementation of positive incentive measures for the conservation and sustainable use of biodiversity;

7. *Recognizing* the importance of assessing the economic value of biodiversity for the enhanced calibration of positive incentive measures, *invites* Parties and other Governments to take measures and establish, or enhance, mechanisms with a view to fully account for the value of biodiversity and ecosystem services in decision-making, including by revising and updating national biodiversity strategies and action plans to further engage different sectors of government and the private sector, building on the work of the initiative on The Economics of Ecosystems and Biodiversity (TEEB), under the aegis of the United Nations Environment Programme (UNEP), the regional initiative of the United Nations Development Programme (UNDP) on the importance of biodiversity and ecosystems for sustained growth and equity in Latin America and the Caribbean, and other relevant initiatives;

8. *Welcomes* the work of relevant international organizations, such as the Food and Agriculture Organization of the United Nations (FAO), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and its initiative on the Economics of Ecosystems and Biodiversity (TEEB), and the Organisation for Economic Co-operation and Development (OECD), IUCN – The World Conservation Union, as well as other international organizations and initiatives, to support the efforts at global, regional and national levels in identifying and removing or mitigating perverse incentives, in promoting positive incentives for the conservation and sustainable use of biodiversity, and in assessing the value of biodiversity and associated ecosystem services, and *invites* them to continue and intensify this work;

9. *Requests* the Executive Secretary to continue and further deepen his cooperation with relevant organizations and initiatives, with a view to catalysing, supporting, and facilitating the work spelled out in paragraphs 1-8 above and to ensure its effective coordination with the programme of work on incentive measures as well as the other thematic and cross-cutting programmes of work under the Convention;

10. *Invites* Parties, other Governments, and relevant international organizations and initiatives to report to the Executive Secretary progress made, difficulties encountered, and lessons learned, in implementing the work spelled out in the paragraphs above;

11. *Requests* the Executive Secretary to disseminate, through the clearing-house mechanism of the Convention, the information submitted pursuant to the invitation expressed in the previous paragraph, as well as to synthesize and analyse the information submitted and to prepare a progress report for consideration of the Conference of the Parties at its eleventh meeting.

## I. INTRODUCTION

1. Pursuant to its in-depth review of the programme of work on incentive measures, the Conference of the Parties at its ninth meeting decided to put more emphasis on the implementation of the programme of work through enhanced sharing of information on good practices, lessons learned, difficulties encountered, and other practical experience on its implementation, and requested the Executive Secretary to convene an international workshop on the removal and mitigation of perverse, and the promotion of positive, incentive measures, consisting of government-nominated practitioners with balanced regional representation, as well as experts from relevant organizations and stakeholders (decision IX/6, para.2). The workshop was tasked to collect, exchange and analyse information, including case-studies on, good practices for, and lessons learned from, concrete and practical experiences in identifying and removing or mitigating perverse incentive measures, and in promoting positive incentive measures, and to identify a limited number of good-practice cases from different regions, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at its fourteenth meeting and review by the Conference of the Parties at its tenth meeting.

2. In paragraph 7 of the same decision, the Conference of the Parties requested the Executive Secretary to compile and analyse relevant information, including analyses and studies from relevant international organizations, such as the Organisation for Economic Co-operation and Development (OECD), on the impacts of positive and perverse incentive measures, to disseminate this information through the clearing-house mechanism of the Convention, and to make it available to the workshop on the removal and mitigation of perverse incentive measures.

3. Pursuant to these requests, the Executive Secretary issued notifications 2009-045 of 1 May 2009 and 2009-070 of 30 June 2009, inviting Parties, relevant international organizations and stakeholders to nominate experts and observers for the international workshop.

4. By the same notifications, Parties, relevant international organizations and stakeholders were also invited to submit any relevant information, including analyses and studies, which would be of use for the work of the experts. Submissions were subsequently received from Cuba, Egypt, the European Commission and India as well as from the Food and Agriculture Organization of the United Nations (FAO), the Organisation for Economic Co-operation and Development (OECD), the initiative “The Economics of Ecosystems and Biodiversity” (TEEB), the German League for Nature and Environment, and the Institute for Environmental Decisions of the Swiss Federal Institute of Technology (ETH) Zurich.

5. The compilation of relevant information requested in paragraph 7 of decision IX/6 was made available through a dedicated website, accessible under <http://www.cbd.int/incentives/workshop.shtml> . The compilation includes the submissions received pursuant to the notifications, as referenced in the previous paragraph, as well as other relevant information on the impacts of positive and perverse incentive measures. The website also provides a link to the online database on incentive measures, which provides relevant information, collected over the past years, on the reform of perverse incentives and the design and implementation of positive incentive measures, including earlier submissions received from Parties as well as relevant organizations and initiatives on these topics.

6. An analysis of the relevant information compiled was made available to the expert workshop as document UNEP/CBD/WS-Incentives/3/2. The document is available in electronic form under <https://www.cbd.int/doc/?meeting=WSIM-03> .

7. The participants in the Workshop were selected from among government-nominated practitioners, taking into account their expertise and the need to ensure balanced geographical distribution, and with due regard to gender balance. Representatives of stakeholder organizations and international organizations and initiatives were also attending the meeting. Through notification 2009-098 of August 2009, the Executive Secretary informed Parties as well as relevant international organizations and stakeholders of the selection of experts.

8. The workshop was held from 6 to 8 October 2009, with financial assistance from the Government of Spain and was hosted by the Division of Technology, Industry and Economics of the United National

Environment Programme (UNEP-DTIE) in Paris. The report of the workshop is made available as an information document.<sup>1</sup>

**II. COLLECTION, EXCHANGE AND ANALYSIS OF INFORMATION, INCLUDING CASE-STUDIES ON, GOOD PRACTICES FOR, AND LESSONS LEARNED FROM, CONCRETE AND PRACTICAL EXPERIENCES IN IDENTIFYING AND REMOVING OR MITIGATING PERVERSE INCENTIVES, AND PROMOTING POSITIVE INCENTIVE MEASURES**

9. Under this item, government-nominated practitioners as well as representatives of international organizations and stakeholders provided and analysed information on their experiences in identifying and removing or mitigating perverse incentives, and in promoting positive incentive measures.

**A. *Identification and removal or mitigation of perverse incentives***

10. In analysing the information provided, the workshop made a number of observations, summarized below:

11. While not being the only type of perverse incentive, subsidies with harmful effects on biodiversity are an important example of perverse incentives for the conservation and sustainable use of biodiversity. Subsidies provided and their effects, including the possible perverse effects for biodiversity conservation and sustainable use, differ largely between countries. It is important to recognize the regionally uneven distribution of subsidies and their effects, particularly regarding developed countries and developing countries. Reference was made in this regard to the overexploitation of fish stocks resulting from agreements for foreign fleets, and to the problem of illegal fishing, problems which would be exacerbated by changing fish migration pattern due to climate change. In terrestrial ecosystems, current trends in contract farming would also tend to exacerbate the impacts of subsidy regimes.

12. While it is important to not overstate or oversimplify the case of environmentally harmful subsidies, it is important to remember that there are many studies saying that world market prices are depressed because of subsidies, to the detriment of agricultural exporters from southern countries.

13. The international dimension of subsidy reform needs to be taken into account, bearing in mind that progress can only be achieved if it is helpful to all countries involved. The negotiations currently under way at the WTO, under the Doha work programme, are important in this regard, and in particular the negotiations on domestic support in the agricultural negotiations, and the negotiations on fisheries subsidies.

14. Regarding the environmental harmful effects of certain subsidies, similar conclusions could be drawn for many OECD and non-OECD countries. While findings would vary from sector to sector and country to country, and while there would be other resource endowments and social outcomes, there is a significant number of examples on environmentally harmful subsidies not just in OECD countries, but also in many non-OECD countries – in particular subsidies to fertilizers and irrigation water. Identifying and removing or mitigating their perverse effects are important areas for further work, and the OECD checklist is a useful tool including for addressing biodiversity impacts.

15. The assessment of subsidies and their effects should not just address environmentally harmful effects, but rather take a multi-criteria, holistic approach, which should also address the cost-effectiveness and the social effects of subsidies. The whole chain of cause and effect matters and could also be addressed through sensitivity analysis.

16. Sometimes, subsidies are removed but environmental quality is not improved. Hence, reforming subsidies may not be sufficient and further assessments are needed in these cases in order to disentangle the complex relationship between subsidies and the surrounding institutional and policy framework.

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<sup>1</sup> The World Conservation Union, with financial support by the United Nations Environment Programme (UNEP), provided support to the write-up of the good practice cases. Both contributions are gratefully acknowledged.

17. Access to, and the provision of, relevant data is often insufficient, and enhancing transparency is an important step, and critical precondition, for identifying and reforming environmentally harmful subsidies. Initiatives taken by countries to enhance transparency were welcomed. In this context, there is a need to recognize that OECD subsidy estimates are conservative ones.

18. For instance, while the results of the Green Paper on the Reform of the Common Fisheries Policy are not yet validated and turned into political action, it is useful to point to the evidence in order to generate a credible process towards subsidy reform. For instance, with regard to fish exports to the European Union and sustainability in export zones, the Green Paper notes that European stock is so overfished that imports need to come from somewhere else.

19. Ad hoc political interventions are sometimes an important barrier to the effective reform of subsidies. Subsidy removal is also an issue of scale, in particular with regard to social implications. As an example, reference was made to the need to support the livelihoods of small and artisanal fisheries. Subsidies can also be useful to protect the environment, if properly designed and targeted towards environmental objectives.

#### *Conclusion and consolidated lessons learned*

20. While support provided and its effects differ largely between countries and sectors, and while there would be other resource endowments and social outcomes, there are generally ample opportunities for identifying and removing or mitigating perverse incentives, both in developed and in developing countries. Such reforms could make a critical contribution to reducing the current rate of biodiversity loss and it is important to pursue this work. The analytical and guidance tools developed by the OECD and UNEP would be useful in this regard, including for addressing biodiversity impacts.

21. The meeting identified a number of succinct consolidated lessons learned on how to organize subsidy reform, including on how to address obstacles to reform:

1. Subsidies can create dependency in the subsidized sectors. Attention should be paid to where vested interest is. The social implications of subsidy reform must also be taken into account, especially when the subsidy is linked to a resource used in particular by indigenous and local communities and marginalized segments of society;

2. Transparency must be improved on what amount of subsidies is given to whom, in order to assess how funding allocations affect biodiversity loss, and in order to mobilize support for subsidy reform. Increasing transparency can also assist in ensuring the subsidy's effectiveness against its stated objective, its cost efficiency, and in minimizing environmental impacts;

3. A strong leadership and broad coalition, based on broad stakeholder engagement, combined with a well-managed process, is necessary to stage reform and take advantage of beneficial circumstances;

4. Better and more complete data and analysis on subsidies are needed, including more comprehensive assessments on the complex interactions between different subsidy programme and other policies. For example, reforming the perverse incentive can release funds for positive incentives, or simply alleviate the need for a positive incentive;

5. There must be better communication and coordination among policy/decision-makers, as well as between policy/decision makers and relevant stakeholders to showcase the potential benefits of reforming subsidies, and/or to ensure coherent implementation of reforms at governmental levels.

#### ***B. Promotion of positive incentive measures***

22. In analysing the information provided, the Workshop made a number of observations, which are summarized in the following paragraphs.

23. Economic instruments (taxes or user fees) play a potentially important role as a source of revenue for funding the provision of positive incentive measures. However, economic instruments, even when applied in the first place, are frequently being set too low to effectively change behaviour (that is, act as

disincentives) or to meet resource requirements for the provision of positive incentive measures. The calibration of economic instruments needs to be improved, both in developing and developed countries.

24. Assessing the economic value of biodiversity and ecosystem services, and complementing existing national accounts to reflect depreciation of natural capital, can play an important role in better calibrating economic instruments and positive incentive measures for the conservation and sustainable use of biodiversity. The initiative on The Economics of Ecosystems and Biodiversity (TEEB) to promote common understanding and broader application of these tools is welcome. There is an information gap in this regard between developing and developed countries.<sup>2</sup>

25. It is important to enhance capacity in, and provide training for, the design and implementation of positive incentive measures. Recent efforts to expand university curricula on environmental economics, undertaken for instance by India and to build regional programmes and networks<sup>3</sup> are welcome. Such efforts need to be broadened.

26. Gender issues need to be taken fully into account when designing and implementing positive incentive measures, for instance, the impact of community forestry programmes on rural and forest-dwelling women through the redistribution of forest resources.

27. Programmes implementing payments for ecosystem services (PES schemes) are most effective when seeking to cover, to the extent feasible, all ecosystem services provided by a particular ecosystem. In this context, reference was made to the requirement, implemented for instance in India, to compensate for the entire net present value of the forest ecosystem in case of forest loss or degradation.

28. In developing countries, negotiations for voluntary PES schemes are typically with the authorities (both formal and traditional), and it is very rare that all voices are heard. This may lead to equity issues as well as limited value of PES schemes for poverty alleviation objectives. While PES schemes can be designed in a pro-poor manner, it is important to recognize that PES schemes are not a poverty alleviation tool.

29. Land ownership plays an important role in designing PES schemes. The allocation of formal land titles may generate important equity effects when introducing such schemes.

30. While offsets are generally a valuable tool for biodiversity conservation, there are important limitations which need to be taken into account. For instance, some areas should be completely off-limits for offset activities, for instance sacred areas and groves as well as areas with a high degree of endemism.

31. Another important potential limitation of offsets is the definition of equivalence, given for instance the important time lags before ecosystems are restored completely – wetland mitigation being a concrete example.

32. Difficult decisions arise frequently in designing and implementing community-based natural resource management in the context of establishing protected areas, in particular with regard to the role of human settlements in protected areas and potential relocation decisions. There is a need to carefully balance objectives of biodiversity conservation and sustainable use, taking into account poverty alleviation and livelihood development objectives. Reference was made to the UNESCO Man and Biosphere Programme (MAB) as an approach to reconcile protected areas and human settlements and activities in buffer zones.

33. Business-driven initiatives (e.g. large retail chains requiring food coming from sustainable sources, indicated by appropriate certification) can play a positive role in providing incentives for conservation and sustainable use. In general, the examples of the pharmaceutical and cosmetic industries, which rely increasingly on biodiversity-based products, show that opportunities exist to understand biodiversity and ecosystem services as an emerging economic sector. However, there is a need to be

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<sup>2</sup> See paragraph 25.

<sup>3</sup> E.g., the Latin American and Caribbean Environmental Economics Programme, or the Economy and Environment Programme for Southeast Asia.

aware of potential limitations – for instance, leakage may occur, resulting in more harmful effects from products that are not covered by certified products.

*Conclusions and consolidated lessons learned*

34. Participants noted a number of important conclusions and general lessons learned from their analysis of existing cases and related information.

35. With regard to the promotion of direct positive incentives, including payments for ecosystem services, participants noted that:

(a) A long-term commitment to providing positive incentives is important. Securing the long-term financial sustainability of providing positive incentives is critical, since positive effects on biodiversity will require time to take effect and since maintaining these positive effects will typically require the ongoing provision of positive incentives;

(b) They are complex undertakings, and not necessarily only for financial reasons, involving the building of institutions and trust. The different mandates and interests, and subsequent dynamics among and between government representatives and stakeholders must be taken into account;

(c) The important relationship between the provision of positive incentives and the removal of perverse incentives must be taken into account. The prior removal of perverse incentives will make positive incentives more effective, and can even reduce the need for providing positive incentives;

(d) They have to understand farmers and life-choices. If the design of positive incentives does not reflect a deep understanding of local communities and farmers and the relationship between the users of natural resources and the resources themselves, they run the risk of not achieving their goals and harming already sensitive bonds of trust between local communities and formal institutions;

(e) Payments must ensure no loss of income, as this could impact the trust built between actors within the scenario;

(f) More generally, equity and gender considerations need to be carefully taken into account, since high poverty and widespread inequality are often part of the barrier to biodiversity conservation in the first place;

(g) They can generate additionality issues and leakage, which must be taken into account during the design stage to ensure that positive incentives are cost-efficient and effective;

(h) They can generate perverse effects when not properly designed and implemented. Understanding the relationship between perverse and positive incentives is also important in this context;

(i) For this reason, there needs to be a regular review of positive incentive measures. Just as sunset clauses must be considered in the case of subsidies, positive incentive measures should be reviewed regularly to ensure that they have generated the intended impacts in a cost-effective manner and within a reasonable amount of time.

36. With regard to community-based natural resource management, the group noted that:

(a) Community participation needs to start early on and be a long-term commitment. This ensures that positive incentives can be monitored for effectiveness, and that the programme gains credibility;

(b) Inputs have to be sustained to gain the trust and confidence of local people, and build credibility;

(c) Benefits must be tangible, tailored and appropriately scaled, so that stakeholder enthusiasm does not wane, and that communities remain committed to the projects;

(d) The responsibility of local people as traditional resource managers must be acknowledged and used, as these communities often have a deeper understanding of how to maintain biodiversity and use it in a sustainable manner.



### III. IDENTIFICATION OF A LIMITED NUMBER OF GOOD PRACTICE CASES FROM DIFFERENT REGIONS

37. The Workshop used the following criteria for identifying good-practice cases as a basis for their work on this item:

- (a) The case should present a policy or policy reform with a substantial contribution to the conservation and sustainable use of biological diversity;
- (b) The case should present examples of positive practice and innovation, creative ways of overcoming barriers and resistance to change, and/or ways of making better use of resources;
- (c) The case should present a good possibility of replication at least within the region, possibly with some adaptation or modification; at the minimum, it should provide a useful reference when searching ideas for own initiatives.

38. The result of the work of the groups is summarized in the annex to the present note.

#### *Annex*

### COMPILATION OF A LIMITED NUMBER OF GOOD-PRACTICE CASES FROM DIFFERENT REGIONS ON THE REMOVAL OR MITIGATION OF PERVERSE INCENTIVES AND THE PROMOTION OF POSITIVE INCENTIVE MEASURES

In light of the request of the Conference of the Parties to identify a limited number of good-practice cases, the following list is by necessity not comprehensive. The Workshop wishes to underline that the absence of a particular case from the compilation below does not imply that such a case could not also be considered good practice.

#### *A. Identification and removal of perverse incentives*

- **Austria: removal of subsidies for wetland drainage** – To establish and run the National Park Neusiedler See, Austria used a package of incentive measures to support protected areas management. This included the removal of subsidies for the drainage of wetlands for agricultural cultivation. The use of a combination of economic incentives, information dissemination and paying individuals compensation for restricting land use proved to be successful. While the area is effectively protected, there is limited information available on actual biodiversity gains. The policy reform was innovative in that it combined a range of instruments to address competing uses and interests in the area. Establishment of the national park affected over 1500 land owners and negotiations had to address the competing interests/uses associated with agriculture, hunting, fishing, the reed industry, the local population and tourism. As this situation is relatively common in Europe, the scope to replicate this case seems good. (*Source: Hubacek and Bauer (1999)*).
- **Ghana: removal of fuel subsidies.** Faced with persistently high oil prices, in 2004, Ghana was unable due to fiscal constraints to continue subsidizing petroleum products. The Government launched a poverty and social impact assessment (PSIA) including all stakeholders. The PSIA found that price subsidies predominantly benefitted the better-off in society. When the Government eliminated fuel subsidies in 2005, leading to a 50 per cent price increase in fuel, the Government launched a campaign explaining the need for price rises and announcing mitigation measures. Mitigation measure included elimination of school fees and a programme to improve public transport. While benefits for biodiversity resulting from the removal of fossil fuel subsidies are presumably rather indirect, the case points to important general lessons with regard to increasing the social acceptability of reform measures. In fact, due to the compensation measures, the transparency of the reform process, and the public information campaign, the public generally accepted the measures. (*Source: ESMAP (Energy Sector Management Assistance Programme) (2006), cited in Bacon and Kojima (2006).*)

- **India: reform of subsidy for chemical fertilizer** - The Indian Government decided in April 2009 to reform the subsidy for chemical fertilizer. Large areas of farmland had become barren due to excessive use of a single fertilizer, urea, which, due to high subsidies, was cheaper than other fertilizers. The new policy provides more leeway to fertilizer manufacturers to mix nutrients needed for different kinds of soil and to sell them as separate products, and subsidies are based on the ingredients in each nutrient mix. This will lead to reduced overall nutrient levels and more adapted composition, which will augment biological resources in agricultural soils (e.g. bacteria, earthworm, micro-arthropods etc.). The increased efficiency of nutrient use is expected to compensate the reduced subsidy. In the transition of subsidy reform, all farmers will receive the new type of subsidy. While further consideration is given to reduce eligibility in the future to more targeted recipient, that is, small and marginal farmers. (*Source: Dr. Asish Ghosh (personal comm.) and The Telegraph (Calcutta) 07.07.09.*)
- **Indonesia: removal of pesticide subsidies.** After 1984, Indonesia reduced its support to agriculture including removal of pesticide subsidies and a ban on the import of broad spectrum pesticides in 1986 and removal of fertilizer subsidies in 1998. Overuse of pesticides had wiped out the natural enemies of the brown rice planthopper resulting in US\$ 1.5 billion of damage to the rice sector. Following subsidy removal, pesticide applications halved while rice production grew by three million tons over four years. A well-funded national programme of Integrated Pest Management (IPM) was a critical factor in the maintenance of rice production and farm incomes. An additional benefit was the US\$ 100 million fiscal saving resulting from subsidy elimination. The reduced use of agricultural inputs was positive for both agro-biodiversity and biodiversity in general. This experience suggests that subsidy removal is feasible even when there is strong opposition from some stakeholders. Subsidy removal was undertaken at the same time as IPM implementation and the decentralization of agricultural research and extension from national to province level. The financial stress associated with declining oil prices after 1984 provided further justification for cuts to government budgets. (*Source: World Bank (2005).*)
- **Denmark: removal of adverse incentives in the forest sector** - To increase the national forested area, the government combined grants for reforestation and compensation for voluntary conversion of private forests into reserves. To eliminate perverse incentives leading to forest degradation, Denmark reformed a regulation which made it illegal to leave unproductive major potentially productive forest areas – with the aim to allow exemptions. Success was linked to the fact that the scheme was voluntary for landowners and that compensation was offered for avoided land use change. This case should be replicable in countries where there is significant private ownership of forest resources, a national commitment to maintain or increase forest cover and financial resources available for compensation. (*Source: OECD (1999).*)
- **European Union: enhanced transparency on subsidy measures in the European Union and its Member States-** A recent European Union financial regulation, agreed in December 2006, requires ‘adequate ex-post disclosure’ of the recipients of all European Union funds, with agricultural spending transparency to begin in the 2008 budget. While compliance of Member States with the regulation is still uneven, the initiative seems to be important for promoting transparency of subsidy programmes, which has been recognized as an important precondition for successful reforms. In fact, the regulation spurred important watchdog initiatives such as [farmsubsidy.org](http://farmsubsidy.org), [caphealthcheck.eu](http://caphealthcheck.eu) or [fishsubsidy.org](http://fishsubsidy.org), which seek to closely monitor compliance by EU Member States and assess the quality of the released data. (*Source: TEEB (2009).*)
- **New Zealand: removal of agricultural and fisheries subsidies** – Prior to 1984, agriculture in New Zealand was highly protected via subsidies, and price and income support. This led to market distortions, over-production and degradation of marginal lands. In 1984, the Government faced a serious fiscal crisis and removed all agricultural subsidies (price and income support, fertilizer, transport and land development subsidies), devalued the currency and liberalized capital markets.

Sectoral adjustment took some time, but the Government supported the farming sector through the transition with loan restructuring and social welfare payments. Approximately 1 per cent of farmers left farming. Today, the agriculture sector is larger than it was when it was heavily supported, more profitable, efficient and innovative.

The support of farmers' organizations and consumer groups contributed greatly to reform success. Reform had a positive impact on biodiversity by reducing the use of fertilizers and pesticides, decreasing pollution levels in rivers and reducing the farming of marginal land. Is this experience replicable? The fact that New Zealand is a small, relatively homogeneous, well-educated and affluent society suggests careful analysis for the reasons for success is required. Important factors include inclusion of all stakeholders at an early stage of reform design. In 1986, New Zealand removed all subsidies to the fishing industry. Subsidy removal was combined with a major change in fishery management regime and a system of individual transferable quotas (ITQs) was introduced. As a result, fish stocks were managed more effectively and in some cases recovered from overexploitation. Lessons learned include the importance of consultation and stakeholder support as fishers were included in the decision making process. (*Source: OECD (2006), OECD (2007).*)

- **Norway: significant reduction of fisheries subsidies** – Norway reduced subsidies to fisheries by 85 per cent between 1981 and 1994 (from US\$ 150 million to US\$ 30 million) without destroying the industry. More effective management measures were adopted simultaneously and as a result the sector is now self-supporting and fish stocks have shown signs of recovery. The case shows that a gradual transition combined with an improved management regime promotes successful reform. The reduction in subsidies occurred at a time when Norway was under financial pressure from falling oil prices and significant external political pressure associated with multilateral agreements, i.e., the 1990 European Economic Space (EES) agreement to reduce direct price support to fisheries. Compensation in the form of optional employment opportunities allowed the sector to downsize without significant negative impact on local livelihoods. This case is similar to the New Zealand case (although a more gradual approach was taken) which suggests that the scope for replication is good when compensation is available to stakeholders who may lose out. (*Source: OECD (2006).*)
- **Uganda: correcting the undervaluation of property rights in fisheries**- For over thirty years, Lake George was severely overfished resulting in decreasing volume of catch and falling catch size. Overfishing was in large part attributed to the undervaluation of prices charged for the 145 fishing licences for Lake George issued each year. Official prices were 7 to 10 times lower than the informal (market) prices. Illegal fishing was widespread; the number of canoes fishing in the lake was three times the permitted number. The low cost of licences led to illegal trade in licenses and the absence of incentives to stop illegal fishing by licensed fishermen. Limited monitoring and enforcement capacity resulting from insufficient revenue collected via the license fee was worsened by the lack of institutional mechanisms for the local communities to support in enforcement initiatives. To remedy the situation, in 1998, the price of fishing licences was dramatically increased. The higher price for fish licences has created incentives for those who have them to protect the fish resources of the lake through sustainable management. Effective fish licensing has reduced the number of illegal fishermen operating on the lake and created incentives for legally licensed fishermen to stop illegal fishing (such as out of season or at night). Communities are now involved in fisheries management through the creation of Beach Management Units which were financed by retaining 25 per cent of revenues from the issuance of fish-movement permits. The revenue collected has substantially increased which has allowed greater monitoring and management involving local communities. The volume of fish catches has increased as well. (*Source: Kaggwa (2009), based on Kazoora (1998), NEMA (2001), Bahiigwa et al. (2003).*)

#### **B. Positive incentives measures**

- **Australia: Bush Tender Programme** - In Australia, voluntary payments programmes have become a tool to achieve environmental objectives. The state government of Victoria disburses payments to

landowners to enter into contracts to adopt a range of vegetation management practices. Reverse auctions are held to minimize the cost of conservation actions. Bids by landholders are evaluated using a biodiversity benefits index and those that are most cost effective (best value) are accepted. The scheme's success has been attributed to (i) the scheme is voluntary and financially compensates private landholders; (ii) contracts differ according to the environmental and economic context thus providing a more efficient incentive instrument; and (iii) voluntary payments maintain the autonomy of the landholder and are thus perceived as fair, which minimizes enforcement costs. As such, biodiversity stewardship payments are suitable in situations where managing threats to biodiversity requires monitoring and management effort from private landholders and outcomes are difficult/costly to monitor, e.g., the restoration and management of habitat for threatened species and the implementation of environmentally beneficial burning and grazing regimes. Since the Bush Tender trial, a number of other auction-type programmes have been developed at a regional level and the federal government has initiated a "Maintaining Biodiversity Hotspots" initiative which includes a biodiversity stewardship payments component. (*Source: Australia (2004)*).

- **Bolivia: selling environmental services-** In the Los Negros valley, 46 farmers are paid to protect 2,774 ha of watershed containing threatened cloud-forest habitat of 11 species of migratory birds. The scheme is financed by two service buyers: the US Fish and Wildlife Service, interested in biodiversity conservation, and the municipality representing downstream irrigators who benefit from stabilized dry season water flows. Payments are made in kind (bee hives, apiculture training and barbed wire). An unintended consequence has been the reduced colonization by landless people; the formal contracts with maps and demarcation for the scheme helped institutionalize de facto land-tenure security and raised local ability to resist invasions. Overall, the threat level after PES was much reduced with positive conservation effects in some cases and negligible conservation effects in others. (*Source: Asquith et al. (2008)*).

#### **Botswana: community-based wildlife management**

In order to address the issue of conflict between local communities and wildlife, the Community Based Natural Resource Management (CBNRM) policy was designed and approved by Parliament in 2007. The policy empowers communities to derive benefits from CBNRM with support from the Government. Community Boards, Technical Advisory Committees and the Kgotla (a place where everyone in the village has a voice) are used to implement the CBNRM policy. The Ministry of Environment, Wildlife and Tourism (MEW&T) spearheads the activities of the CBNRM with the Department of Wildlife and National Parks as the secretariat for all CBNRM activities. The village of Sankuyo stands out as a good practice case for CBNRM as the community derives a significant amount of benefits from their biodiversity-based enterprises. Local communities operate a lodge (Santawani) and a camp site (Kaziikini) and they derive additional revenue from safari drives, basket weaving and game walks. As a result, the community now has a different view of elephants and predators which used to destroy their crops and prey on their livestock. Today, the community relies on wildlife for local livelihoods and views wildlife as a resource rather than an enemy. (*Source: Monamati (2009)*).

- **Cameroon: Cane-rat domestication and green Sahel reforestation programmes** - The bush meat trade in Central and West Africa is threatening regional biodiversity as harvest levels are unsustainable and threatened/endangered species (mountain gorillas, monkeys) are killed for food. The Government of Cameroon has initiated support for the commercial production of cane rats in order to provide a substitute for bush meat. Farmers are trained in canerat raising, animal health and marketing. The objective is to protect wildlife, provide a substitute source of protein in a region where bushmeat is an important source of food and income, and to alleviate rural poverty and promote self-employment by providing alternative sources of livelihoods.

In the Lake Chad region, reforestation activities are undertaken in order to raise water levels and to encourage sustainable agro-pastoral activities, and conserve dwindling biodiversity. The Lake Chad

basin area has decreased from 26,000 km<sup>2</sup> in 1963 to barely 1,500 km<sup>2</sup> in 2001. The main activities are encouraging local production of tree seedlings, buying seedlings from farmers and employing local communities and organizing labour for afforestation/reforestation programmes by youths and NGOs. By financing ecosystem restoration, the Government is in effect paying for ecosystem services and restoring biodiversity (e.g. fish, fauna, flora) to create optimal conditions for agro-pastoral production and human habitation and to ensure food security. (*Source: Mr. Steven Njinyam Ngwa (personal communication).*)

- **Colombia: Forestry project for the basin of Chinchina river (PROCUENCA)** – This PES scheme involves payments for reforestation in a critical watershed to support the supply of water, promote biodiversity conservation and carbon sequestration. Participants included 232 rural land owners (covering 3,427 ha) and the costs were met by the Manizales Municipality Water Supply Company (mixed public/private). Payments were contingent on improvements in farmers' cattle ranching methods and were in kind – supply of seedlings, planting and technical support. The environmental outcome was positive with an increase in area under native forest, reduced pressure on natural forests, reduced erosion. This PES scheme has expanded into a Clean Development Mechanism (CDM) carbon sequestration project and will be able to issue certified emissions reductions (CERs) and benefit from the revenue from the sale of CERs (which will be shared). This scheme supports experience that has shown that when there is a single (or a small number of) user of watershed services, the likelihood of user financing is greater. (*Source: Colombia (2004).*)
- **Costa Rica, PSA programme:** The PSA programme is a national payment programme for carbon offsets and storage, hydrological services and the protection of biodiversity and landscapes. Between 1997 and 2004, approx. US\$ 200 million has been invested in PES to protect over 460,000 hectares of forests and forestry plantations and to provide additional income to more than 8,000 forest owners. In the past it has been predominantly financed by a sales tax on fossil fuels, but the objective is that all beneficiaries of environmental services pay for the services they receive. While there has been some success charging water users for upstream watershed management services, there has been more limited success charging for biodiversity and carbon. However, there are still significant benefits to biodiversity associated with forest conservation. The PES scheme has helped slow deforestation, added monetary value to forests and biodiversity, and increased understanding of the economic and social contribution of natural ecosystems. (*Source: Pagiola (2008).*)
- **Cuba: Havana Bay user tax-** To promote conservation in Havana Bay, the Government of Cuba applied a tax on users (tourism, recreation, harbour activities). The revenue was earmarked for an environmental fund for cleanup activities. Following implementation of the tax, hydrocarbon concentrations in the bay were reduced as industry effluent emissions were cut by 50 per cent. Signs of the recovery of the ecosystem include the reappearance of fish and phytoplankton species thought to be lost. A high level of coordination between economic and environmental policy makers enabled the introduction of the tax. This experience with environmental taxation has been so positive that the Government is replicating the scheme in three other bay areas in Cuba. (*Source: Vasquez (2009).*)
- **Ecuador: Decentralized environmental payments-** The programme of environmental payments includes Pimampiro, a municipal watershed protection scheme and PROFAFOR, a carbon sequestration programme. These programmes have both been effective in reaching their environmental objectives and have shown high levels of additionality and low leakage effects. This success has been attributed to a focus on a targeted environmental services and strict conditionality. Both schemes have improved the welfare of participants, mostly through higher incomes. The model is being replicated throughout Ecuador. (*Source: Wunder and Alban (2008).*)
- **Egypt: Development of community-based eco-tourism-** The Government of Egypt has identified opportunities to enhance the quality of tourism and increase revenue streams by promoting Bedouin-managed tourism enterprises in pristine wilderness areas inside protected areas. Sustainable tourism in St. Katherine Protectorate is intended to conserve natural and cultural resources and

provide benefits to local communities. The programme includes reconstruction of a Bedouin habitation into an eco-lodge, establishing nature trails, revitalizing traditional craft skills, constructing a visitor centre, publishing tourist maps and nature guidebooks, etc. The programme is based on local stakeholder participation, collects entry fees to protected areas and promotes eco-tourism businesses via training and technical support, providing local incentives to conserve the wildlife base of these revenues. (*Source: Egypt (2009).*)

- **France: Payments for improved watershed management practices** - Vittel, a French mineral water company, made payments to livestock farmers in the catchment above its source aquifer to adopt more sustainable farming practices. Water quality was threatened by the increasing use of fertiliser and pesticides in maize production used to feed increasing intensively farmed livestock. Changes in farming practices were required to reduce nitrate run-off and maintain water quality in the aquifer. The scheme was effective in achieving its environmental objective – maintenance of water quality. The process shows elements of good practice, including an extensive local research programme, establishment of an intermediary institution based and staffed in the farming community, effective communication, and continuous efforts to build trust. Careful negotiation procedures resulted in compensation that ensured both farmers and the company were better off. Evian, Coca-Cola and Asahi have all undertaken similar schemes to ensure water quality as a critical input into commercial products. (*Source: Perrot-Maître, D. (2006).*)
- **India: Joint Forest Management and National Biodiversity Acts** – The Forest (Conservation) Act of 1980 provided the opportunity for setting up a mechanism of funding for compensatory afforestation, in case the forest land is allowed to be converted for non-forestry purposes. The Forest Policy (1988 further ensured a process of Joint Forest Management (JFM) by forming Forest Protection Committees (FPC) with participation of the local community. As a result, between 7-9 million ha. were being jointly managed by communities and the forest department in 2000, with 35,000 community committees existing. Although details differ from state to state, committees in almost all states hold full rights over most non-timber forest products, and are entitled to receive a share of receipts for those exempt from full entitlement. Moreover, 25-50 per cent of the receipts from non-timber sales by the forest department go to the committees. Positive changes to local livelihoods have been observed accordingly; for example, benefit-sharing has increased the income from sale of forest products to its members and the revenue re-invested into forest management.

The Biodiversity Act of 2002 and 2004 also devised a legal framework for access and benefit-sharing (ABS). The Act stipulates norms for access to biological resources and traditional knowledge. Under the Act, a three tier management system has been proposed, at the Central and State Government levels as well as the local level. At the local level, biodiversity management committees (BMCs) act as independent bodies with seven representatives from the respective local community. They can determine the amount of levy to be charged for any biological resource to be utilized commercially; and the funds thus collected will be deposited to the local biodiversity fund, which can be utilized for providing incentives to individuals or communities undertaking biodiversity conservation. The BMCs work with people's biodiversity registers (PBRs), which are prepared by the local community in the local language. (*Source: Presentation and oral communication of Dr. Asish Ghosh at the workshop on incentive measures.*)

- **Japan: Payments for forestry management financed by environmental taxes** - In Japan, since 2003, 29 prefectures have introduced forest environmental taxes. These are taxes that require payment from beneficiaries of forest ecosystem services. Part of the revenue is earmarked for direct payments to forest owners for forest management work to protect critical watershed areas. There are also privately financed PES schemes taking root. Several beverage manufacturers provide forest management services, such as forest thinning, and cooperate with local governments to assist (in-kind) the management of forests located upstream of factories in order to benefit from continued watershed management. An important lesson learned is that tax rates need to be set at an adequate level in order to generate sufficient revenue for the payment schemes. (*Source: Presentation of Prof. Kiichiro Hayashi at the workshop on incentive measures.*)

- **Mexico: payments for hydrological environmental services (PSAH) programme** – To combat problems of high deforestation and water scarcity, payments are made to forest owners to ensure watershed protection and aquifer recharge in areas where forestry is not commercially viable. The scheme was financed by increasing the federal water fee paid by users and earmarking a percentage to pay for environmental services. A two-tiered approach was adopted with US\$ 18 hectare paid for most forest and US\$ 27 per hectare paid for cloud forest (due to its significant hydrological value). While evidence suggests that many payments have been in areas of low deforestation and that enhanced targeting is needed in order to attain a greater environmental impact and improve the cost-effectiveness of payments, deforestation has been reduced, and the poor were successfully involved. The schemes' success is associated with a clear political commitment which is based on the widespread perception (in Mexico, Central and Latin America) that the forest-water environmental relationship is important. The scheme has since introduced a series of weights for water scarcity, deforestation risk and poverty in the application grading system to improve targeting and efficiency. (*Source: Muñoz-Piña et al. (2009)*).
- **Nepal: Himalayan biotrade** – The Asia Network for Sustainable Agriculture and Bioresources (ANSAB) created Himalayan Biotrade to market non timber forest products (NTFPs) produced by local community enterprises in Nepal to national and international markets. Community enterprises specialize in natural and sustainably sourced NTFPs (essential oils, handmade paper, and medicinal and aromatic plants) that hold organic and/or Forest Stewardship Council (FSC) certification. The scheme targets supply chains of multinational companies committed to sustainability and willing to pay price premiums for sustainably sourced material (Aveda, S&D Aroma, Altromercato). Integrated model of enterprise development and forest conservation has been a successful model. Local communities are responsible for protecting and monitoring resources which they are then able to harvest/sell. Additional incentives are provided further up the supply chain by linking community enterprises so they are better able to compete and obtain higher returns internationally. (*Source IUCN, Biodiversity Business Times*).
- **Philippines: environmental tax** - The Philippines has instituted a programme that requires companies to minimize pollution generated and then applies an environmental user tax for residual damage in the Laguna de Bay watershed. The tax obliges polluters to pay for the damage associated with waste water discharge. The goal of the system is to oblige businesses to bear the cost of environmental protection and to make explicit the link between human activity and water quality in the lake. The fee has been set at a level that covers implementation and monitoring costs. Anecdotal evidence suggests that water quality has improved. (*Source: Presentation of Dr. Antonio C. Manila at the workshop on incentive measures*).
- **Uganda: Collaborative management schemes** – Uganda promotes the use of collaborative management schemes for the conservation and sustainable use of biodiversity. In national parks and game reserves, 20 per cent of entry fee collection goes directly to communities neighbouring protected areas. Since 2000, a total of US\$ 1.7 million has been collected, of which \$896,000 has been disbursed to a total of 600,000 people. In forest reserves, Community Forest Management is widespread. In the fisheries sector, beach management units (BMUs) are established and retain 25 per cent of revenue generated from trade in fish. Markets, marketing and value added processing are promoted for ecosystem-based products from wetlands (mats, baskets) that are produced in a sustainable manner. Revenues generated go to the local ecosystem stewards, providing incentives for conservation and sustainable use of ecosystems. Uganda thus promotes innovative ways of empowering local communities, who are the stewards of many ecosystems, to access international markets and seeks to develop the strategic role of private sector-community partnerships in the sustainable use natural resources. (*Source: Mr. Ronald Kaggwa Kiragga (personal communication)*).

*Note: complete references are provided in the report of the Workshop (submitted as an information document)*

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