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RESCCUE

## **Economic tools for biodiversity: what contributions to expect from additional players in a crowded playing field?**



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**Front cover photo:**

African tulip trees recovering (too) fast after TC Winston, Ra Province, Fiji (R.Billé, 2016)

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## ***Introduction***

In its support to implement integrated coastal zone management (ICZM), the RESCCUE project gives an important role to economic valuation and to innovative economic and financial instruments. As it does so, it participates in the global effort to develop such tools and mobilize them in favour of sustainability and of biodiversity conservation (an effort that can be illustrated for instance by the TEEB report (Sukhdev et al., 2010), or the Natural Capital Project (<http://www.naturalcapitalproject.org/>)). This widely shared effort has led to economic tools for biodiversity (ETBs) being well-known, well-supported and readily available. Their promotion has triggered a global debate on the potential of such tools, their promoters listing in detail the benefits they could (in principle) bring, their critics considering in depth all the adverse effects they might have.

Such debates on the principles of economic tools for biodiversity and on their potential pros and cons are now at the centre of the professional and academic domain of sustainability, of ecosystem management, of biodiversity conservation. The debate itself increasingly tends to run in circles, as both pro and con arguments based on principle become more and more repetitive. It is now time to move to the practical side of things with questions such as: are the tools really used, by whom, how and with what tangible goals, with what success in terms of environmental and sustainability outcomes? Feedback from the field, both through practice and through the literature suggests there is a large gap between the principles and the practice of the tools, and that the latter is very poorly known.

The field in general and the RESCCUE project in particular, need reflection and guidance on the practical implementation and effectiveness of economic tools. This paper proposes such reflection and guidance based on the practical experience of its authors and on a series of research projects, especially over the last five years<sup>1</sup>. In both practice and research, we have endeavoured to analyse and use ETBs not only from the perspective of economic theory, but also of management-science, i.e. based on in-depth analysis of how they actually operate in real-world environmental management situations. By crossing economics and management characteristics, we have come to group ETBs in four categories:

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<sup>1</sup> See box 1.

- Ecosystem services valuation (ESV), that provide monetary information for making decisions that affect ecosystems,
- Payments for ecosystem services (PES), that provide (usually continuous payment for good practices adopted on a voluntary basis (without a change in property rights),
- Buying of land or conservation easements, that rely on (usually one-off) payments for a change of property rights that prioritizes management for biodiversity purposes,
- Biodiversity banking, i.e. mechanisms that allow exchanges of rights to destroy biodiversity against resources for biodiversity conservation or restoration (compensation being at present the main tool in that category).

These categories have relevance both from a practical and from an analytical point of view: tools in each category promise similar contributions to management and raise similar problems in management. Dealing with ESV alongside the other economic tools may seem unusual since much of the literature deals separately with valuation and with other economic tools, treating the first as a form of analysis and the others as instruments for action. ESV, however, is an informational instrument that is also to be used for interventions to change biodiversity management, alongside other ETBs. It is also connected with other ETBs by their common economic theory basis and by the central role of money. Furthermore, one of the often promoted uses of ESV is to calculate values for the implementation of other ETBs, such as PES or biodiversity banking. All these reasons plead for dealing jointly with all ETBs, including ESV. Indeed, we note that in practice they are often promoted as a package – the TEEB reports, or for that matter, the RESCCUE project itself, being obvious examples.

In this paper, our reflection for practical implementation and effectiveness of ETBs will be organised in six sections. The first five draw lessons – one could even say, warnings – from experience and management research about ETBs “in use”. Section 1 insists that we base our planning on the actual use and practical perspectives of use of ETBs, rather than on in-principle expectations. Section 2 points that ETBs are just tools and that their effectiveness depends on who operates them. Section 3 shows that economic and non-economic tools are almost always used in combination and that the differences between them are smaller in many ways than the differences amongst ETBs themselves. Section 4 warns that ETBs cannot

compensate for the weakness of commitments to long-term conservation of biodiversity – on the contrary, their implementation depends of firm political commitments if it is to have tangible biodiversity and ecosystems management impact. Section 5 underlines that in practice the use of economic tools always relies on some form of negotiation. If ETBs are to be successful, it will be through their contribution to making new deals in specific situations. As they do so, they will also have to help terminate existing bad deals, such as “brown subsidies”, or old-standing deals underlying unsustainable uses. To what extent are they in a position to do so? What new deals can they practically support? Such questions could be the main Ariadne’s thread of practical guidelines to the use of ETBs. Based on these five broad lessons from analysing ETBs “in use”, section 6 proposes recommendations for making the most of ETBs in the RESCCUE project, by focusing on how one combines tools for action, in the framework of what overall strategy, to resolve what ecosystem-management problem, based on what diagnostic.

### ***Section 1. Lessons learned from actual use (or non-use) of ETBs must guide future use***

The literature on ETBs is replete with rather speculative considerations on how they could and should function in theory, and on the benefits one could expect. We have based our research on the sobering investigation of how they operate “in use”, i.e. in actual practice, in the framework of real-life biodiversity management. Two series of results, on valuation and on PES respectively, should be particularly relevant for the RESCCUE project.

*Ecosystem services valuation (ESV): calculus-based decision-making hardly ever occurs in practice.* The literature considers a range of possible uses of ESV, for “information” (i.e. awareness-raising, advocacy, or providing indicators), for “technical use” (i.e. for establishing damage-compensation levels or for setting PES prices), for “decision-making” (i.e. through CBA of projects, participatory ESV or comparison of various uses of limited biodiversity conservation funds). Of these possible uses, inclusion in cost-benefit analysis (CBA) type reasoning in order to guide decisions on optimal policy is the most favoured by economic theory. Both systematic literature review and practical experience show it is hardly ever found in practice. The reason for this is straightforward: decisions on policy are not just technical and economic: they also involve politics and require the support of organisations which have their

own rules, routines, and rationality. To understand and guide implementation, the rational model of decision-making underlying the economic theory basis of ETBs has to be combined with the political and the organisational models of decision-making. Also, concretely examining how decisions are actually made in a given policy and implementation context helps determining more precisely and realistically which uses of ESV make practical sense in that context. Finally the technical limits of ESV – in terms of both the limited precision and the inevitable subjectivity of valuations – further constrain their usability for decision-guiding CBA calculus.

Overall, our previous work shows that other kinds of uses are more relevant to the actual needs of real-life decision-making processes for environmental management. They are especially those uses that consist in making visible what kind of ecosystem services are significant in a given case, who affected stakeholders are and how they are affected by ecosystem services (or affect them) – i.e. uses for exploration, advocacy, deliberation and negotiation.

*PES: direct, simple service-user to service-provider deals are very rare in practice.* Wunder (2005) defines PES as (a) a *voluntary* transaction where (b) a *well- defined* environmental service or a land-use likely to secure that service (c) is being “bought” by a (minimum one) service *buyer* (d) from a (minimum one) service *provider* (e) if and only if the service provider secures service provision (*conditionality*). Almost all field studies, however, show that (1) the “buyer” is seldom directly the user, that (2) intermediaries of various sorts (NGOs, academics, administration, etc.) need to be heavily involved for PES projects to take off and that (3) what one gets exactly for the payment is not as straightforward as the definition suggests. In the same paper where he proposes the definition above, Wunder himself recognizes that almost no real case of PES would comply with it, but still insists on keeping the definition, because it embodies the promise of innovation that makes developing PES worthwhile. Indeed, PES have been promoted as an alternative to complex integrated projects that combine development and conservation and have proved both difficult to implement and delivering disappointing environmental outcomes. Overall the aim - getting as directly as possible to new deals about ecosystem services – remains worthwhile – but the means – letting users pay following direct transactions with “producers” – are unrealistic.

The principle of using payments is fine, but the promise of simplicity implied in the basic concept of PES is a poor guide to sound implementation. A lucid and

systematic analysis of the actual biodiversity management situations and strategies in which payments are to be used will serve much better.

## ***Section 2. Economic tools are not automats: how they are operated and by whom is crucial for relevance and effectiveness***

After critically screening all economic tools for biodiversity in the way exemplified above by ESV and PES, the bottom-line can be summarized as follows: there is a widespread perception that as soon as one introduces economic tools into environmental management, their intrinsic rationality and deal-making power will deliver improved decisions and actions, as if they were doing the job by themselves, like beneficial automats. This belief is an illusion: economic tools are just tools. They are effective only if applied skilfully by ETB-operators who are: (1) skilled enough to use the tools appropriately; (2) powerful enough to implement them in face of the inertias or resistances met in the field; and (3) determined to fulfil environmental objectives. The last point deserves attention, as the use of ETBs by ETB-operators who are not strongly motivated by biodiversity goals risks “eco-opportunistic” diversion by ETB-operators and beneficiaries who are willing to use the financial resources, but are not committed to delivering biodiversity outcomes.

In the context of integrated environmental management – e.g. of the RESCCUE project - two broad types of ETB-operators should be considered:

- advocates and managers who are specifically in charge of pursuing environmental goals (e.g. environmental NGOs, environmental administrations or public bodies, etc.),
- authorities who are committed to reconciling the diversity of activities, interests and concerns (including biodiversity issues) that makes coastal management such a puzzle.

ETBs can be useful for both types of operations, as long as it is clear who is using them to act on whom, in order to operate what change (or to support what existing practices), and pursuing what outcomes.

### ***Section 3. Economic instruments are closely related to other environmental management instruments***

Most of the literature devoted to assessing the prospects of economic instruments tends to see them as the introduction, into a “command-and-control” administrative system, of a specific and different kind of solutions. OECD papers, economic analysis textbooks, or Mohammed (2014) for instance, are typical of this approach. In such sources, implementing ETBs is more or less seen as transplanting, to a sub-optimally performing body, a newly designed artificial organ of a different nature, that will bring effectiveness and energy. In this approach implementation issues lie mostly in having the transplantation accepted by the patient and making sure the graft is not rejected.

When ETBs are analyzed “in use”, the picture is quite different from this *transplantation* vision. By the way they operate, by the implementation issues they raise, the various types of ETBs are closely related to existing tools. This kinship between economic and other kinds of environmental management instruments is twofold: (1) most ETBs can only operate jointly with other instruments; (2) ETBs raise the same kind of implementation issues and conditions for effectiveness as other instruments that rely on similar theories of change. This is an important consideration for three of the four types of ETB we presented above.

- ESV operates in a very similar way to other information tools, especially, biodiversity indicators. It relies on similar assumptions: better information will lead to better decisions and management. It effectively adds monetary indicators to other sorts of information included in indicators systems. It relies to a large extent on the availability of such other (ecological, technical, social, ...) information and data. In use for decision and action, it usually raises the same issues as other indicators systems, e.g., problems with available data, debates about methods for calculating indicators and about their reliability, as well as doubts on the real impact of indicators systems on decision-making and environmental management.
- **Land acquisition instruments and conservation easements** for biodiversity are closely affiliated with protected areas and area-based conservation measures. They operate on the same theory of change: ensuring management that puts biodiversity first in designated areas by

securing direct control. The difference between economic and regulatory instruments lies only in the legal modalities: regulating or buying. For the rest, in real-life situations the issues are similar: securing sufficiently wide support for marking out areas of land or sea and the challenges of managing the land once it has been marked-out are in many ways similar in both cases.

- Lastly, **compensation** schemes exist only as an integral part of permitting procedures. By adding compensation to avoidance and mitigation of negative impacts, they extend and complement the EIA approach. Their implementation raises the same sort of issues: the need for adequate capacities in professional expertise, the need for competent, active and independent administrative organizations, the technical and ethical difficulties of establishing criteria for assessing impacts. As they refine and extend existing permitting-EIA procedures, they both rely initially on the sufficient quality of such procedures, and eventually, on an increase in their resources (e.g. in manpower for professional expertise and in administrative capacity and workforce).

The potential of these three types of ETBs to deliver change and their possible difficulties “in use” are better served by studying and using each of them alongside the other, non-economic, instruments they are respectively related to.

The situation is somewhat more complex for PES:

- Large-scale PES are very close to governmental schemes that involve distributing subsidies to induce specific behaviors from economic agents, e.g. through agriculture, forestry, fisheries or tourism development programs, or granting tax exemptions for certain types of land-uses or development. Such incentive-based instruments are usually closely combined with other instruments in the framework of wider policy packages, as is evident in agricultural, forest, sea-transport or fisheries policies.
- The more “**market-based**” types of PES, those based on bilateral contracts with services “producers” belong to the family of contractual instruments. Actually, they make up most of that family, since most contractual arrangements involve some form of monetary payment. Here the connection with other instruments arises from the fact that the

commitments that are the counterpart of the payments often involve other types of instruments, in ways that are very contingent to each specific situation. For instance, when the “deal” compels one of the parties to effectively control poaching, anti-poaching activities are related to the usual range of traditional administrative action: training and paying guards, organizing patrolling, signaling illegal activities to the authorities... When this activity is organized through a PES, the specificity does not lie in the nature of the activity that is funded, but in (1) who is paying (e.g. representatives of the tourism industry), (2) who is in charge of managing the organization (e.g. the village community organization and an NGO) and (3) what types of obligations the parties must comply with (e.g. contract durability based on annually verified obligations).

In brief: (1) ETBs are very different from one another; (2) each of them is very close to other, non-economic instruments; (3) the potential and limitations of economic instruments should be assessed in view of previous experience and current field realities with other, non-economic but similar, instruments; (4) more often than not, ETBs are used in close combination with other kinds of instruments and it is such combinations that should be designed for effectiveness.

#### ***Section 4. Economic instruments need to rest upon strong public commitments***

Frequently expressed opinions, and much of the literature dedicated to ETBs tend to view economic instruments, and especially those based on private initiative, as a means to cope with the weakness of public institutions. This is singularly true when ETBs are considered in the context of developing countries, where market solutions are put forward as means to compensate administrative weakness, poor law enforcement or insufficient political commitment to biodiversity conservation. There may be some theoretical arguments that make ETBs reasonable candidates to stand in for inadequate public involvement in biodiversity policies: they can enlighten the detrimental effects of inadequate biodiversity policies (ESV); they can bring new funds to under-funded areas (PES, land acquisition, conservation easements and concessions); they offer flexibility to ease the implementation of environmental standards that are difficult to enforce (compensation mechanisms).

But other, compelling theoretical considerations, as well as observations “in use” demonstrate that in many cases, ETBs, if they are to be effective, need to be able to rely on firm and clear commitments from the authorities to long-term biodiversity conservation.

Most obvious is the case of **compensation mechanisms**. Their foundation lies on a clear limit to biodiversity erosion set and enforced by policy-makers. The archetypal example of compensation in the biodiversity field is the “no net loss” of wetlands policy. Only once such a “cap” is set can compensation come into play. Its purpose is to add flexibility into the effort to enforce the cap. Setting a cap to biodiversity erosion is like closing a door. Compensation allows to partially open the door so as to catch less fingers against the doorjamb, thus eventually closing the door more easily and effectively. If the effort to enforce the cap is weak, compensation schemes will only weaken it further by opening wider an already open door. On another level, as compensation measures generalise, they create a need for significant areas of land (or sea) that will eventually be set aside to implement compensation measures. In view of the competition for land and resources, this is unrealistic without serious political commitment to long term conservation of biodiversity. Since this is especially important where space is scarce, like in urban or coastal areas, and in small islands, it could be an important consideration for RESCCUE.

**Instruments that rely on buying** land or conservation easements may seem at first sight to escape the need for public commitments to conservation. Field studies show, however, that even when such instruments function on private initiative and funds, in most cases their feasibility depends on the fiscal regime, on land-use regulations and land-use planning and, *in fine*, on a sufficient degree of support from local administrative and political authorities to the principle of setting aside significant areas for conservation. This need for public commitment to long term conservation is *a fortiori* crucial when the purchase is made by a public operator (like the French Conservatoire du Littoral).

As concerns **PES**, they introduce changes in economic transfers. In doing so, they have an effect on distribution, which cannot happen without triggering rivalry and critiques that will trigger political involvement. A firm public support is then a necessary condition for PES to develop and expand. Policy-makers will also have to affirm, or reaffirm their will to set a limit to environmental degradation, since to make

PES feasible on any significant scale, they might have to pass new legislations or ask for new regulations in many fields, such as fiscal, land-owning, land planning, etc. Likewise, administrations and local governments will have to accept and include PES in their management plans.

Finally, the importance of political commitments takes different forms in the case of **Ecosystem services valuation** (ESV). As long as valuation is only used as a tool for investigation, information, critique and public debate, it requires no involvement of authorities. If, however, one expects ESV to contribute to decision-making (e.g. on planning, regulation or permits for projects that impact biodiversity), since such decisions are by nature administrative and political, the way ESVs are conducted, interpreted and eventually used, will depend on how committed public authorities are to give a degree of priority to biodiversity considerations.

To sum up, some ETBs (biodiversity banking, PES that rely on payments involving public funds, use of ESV for making public decisions) rest directly on commitments of public authorities to biodiversity goals. For most other ETBs, as soon as they affect land-use, economic transfers or public decisions – i.e. as soon as their use makes a significant difference – they will fall indirectly in the purview of public authorities. As a result, their feasibility and possible levels of impacts will depend on the level of support (or at least tolerance) they receive from public authorities. In most cases, such support or tolerance will be closely connected with the actual level of commitment of authorities to biodiversity goals.

### ***Section 5. Sound implementation of ETBs requires negotiating new arrangements and renegotiating old ones***

A fifth and final series of findings and warnings is that ETBs are implemented through, and for, negotiations. This is no surprise for PES, which rely on a deal between ecosystem services “providers” and “buyers”. But it may seem surprising at first sight for ESV or for compensation schemes, which are often conversely presented as based on objective grading scales that would support rational decision-making instead of bargaining. As for the purchase of land or land-rights, one might think the negotiations go no further than in usual real-estate deals. Examining numerous cases shows that successful implementation of all types of ETBs relies on, and supports, extensive negotiations. Before going into more detail, it is essential to note that the relationship goes two ways:

- economic tools are implemented through negotiations, i.e. extensive negotiations are an incontrovertible and instrumental part of successfully implementing ETBs,

- economic tools are used to support and enhance negotiations, i.e. they make negotiations possible that would otherwise not take place, or that would be difficult. This matches the economic theory argument that ETBs introduce flexibility that makes better arrangements possible.

\* The use of **ESV** as a purely objective and rational decision-making tool, as it is widely envisioned in environmental economics textbooks, does not occur in practice. What does occur is the use of ESV as an input to the debates, deliberations and negotiations that lead to decision-making. Two main types of such use (in connection with the two main types of ETB-operators identified in section 1) have been advocated and experimented with a degree of success. (a) ESV can be used as a support for collective deliberation, or for mediation, by clarifying some of the costs and benefits, and who would incur them or benefit for them, as a step to help negotiation of solutions ; (b) ESV can be used as a tool for advocacy (if one reads carefully the TEEB reports, this comes out as the most tangible actual use promoted by the report and supported by field examples).

\* The negotiation between “provider” and “user” of ecosystem services that is the foundation of **PES** goes much beyond the direct deal implied by classic definitions. The “buyers” are rarely the users themselves: the organization of payments relies on putting in place more or less complex funding schemes that require extensive multi- stakeholder negotiations. Field cases of PES “in use” also show that the promotion and design of such schemes rely heavily on brokers whose main expertise and contribution consist in initiating and leading such negotiations.

\* The **buying of land or conservation easements** goes much further than simple real-estate deals. Field studies and experience shows that they involve, inter alia, securing fiscal measures, land-use planning modifications, political support for long term conservation of an area, initial arrangements, followed by continuous negotiations for the management of the land, once rights have been purchased. All these conditions rely on extensive, diverse and interdependent negotiations.

\* As for **compensation schemes**, they are indeed based on the implementation of regulations. One may tend to oversee the importance of negotiation here, but in practice, a wide array of negotiations are instrumental in the implementation of

permitting procedures (a statement supported both by practical experience and by the political science literature, see for instance ). The actual impact of compensation regulations essentially relies not so much on general principles as on how they are actually negotiated on the ground. This does not mean that equivalence grading scales used for compensation schemes are pointless, but that their point is precisely to provide more solid leverage for negotiating better deals for biodiversity in the course of the political and administrative negotiations of land-use planning and of development.

In brief, the use of ETBs on the ground consists to a great extent in negotiating better deals for biodiversity. It is thus important in ETB-based projects to make sure there are some motivated and capable users that will negotiate ETBs on the ground, because, as stated above, ETBs are not automata, they do not negotiate themselves. It is also important to be clear about who the reference users – thus the reference negotiators - are in each project, because the implementation of the tools depends much on who these reference users are, e.g. an active biodiversity advocate, or a public authority seeking resolution of tensions and contradicting public interests.

Both from an economics and management perspective, the potential of ETBs to support new and better deals about biodiversity is the foundation of why they are worth experimenting and implementing. But such positive expectations can be foiled if they lead to focus too much on possible new deals and by doing so, distract attention from older deals that burden biodiversity. In all but the rarest cases new, ETB-based deals add themselves to a whole set of other deals that have already been made in the same place. For instance, payments to encourage agricultural extensification in Europe occur on top of existing, massive, payment schemes that support intensification. Similarly, ETBs in a given coastal area will add themselves to a whole set of existing deals (e.g. subsidies to fishing fleets, fishing regulations, land- use plans, etc.), that are decisive for the existing situation of economic activities, of biodiversity and ecosystem services. Often, ETBs find themselves in competition with other economic tools that are detrimental to biodiversity.

One of the most important warnings is that implementing ETBs should be taken not just as negotiating new deals, but as re-negotiating those deals that have to be changed for effective biodiversity conservation and integrated management. Existing schemes like “brown subsidies”, local public policies regarding this or that sector of the local economy, etc., must be reexamined if implementation of ETBs is to make a

decisive difference. Understanding pre-existing deals and the overall picture of how negotiations work in each pilot-site is of the essence. What kind of deals exactly have to be considered depends very much on the local context. For the RESCCUE project, a first step could be to establish guidelines on what types of pre-existing arrangements and economic transfers should be examined, based on the general context of ICZM in Pacific islands. Each pilot project could then adapt these guidelines to suit the specific situation of the area and issues it covers.

### ***Conclusion and recommendations***

A one-sentence summary of this paper would be that there is far from the cup of sound economic operating principles of ETBs to the lip of successful outputs and outcomes on the ground. In between lie the challenges of real-world environmental management situations. The analyses and warnings presented in the paper point to specific aspects of management situations that must be appropriately dealt with to improve implementation of and outcomes from ETB-projects. In each pilot-project, these issues ought to be considered carefully at all stages of project design, implementation and evaluation:

- during the initial assessments of needs, gaps and capabilities that precedes project design and proposals for the choice and rough design of instruments,
- for ex ante evaluation, i.e. at advanced stages of project design, before actual implementation, to check what adjustments may be needed for successful implementation,
- for in itinere evaluation, during implementation, in particular for trouble-shooting if there seems to be problems with implementation, outputs or outcomes,
- for ex post evaluation, to assess the degree of success of the pilot-project, and draw lessons about each site and more generally about the use of ETBs for ICZM in the region.

The examination of projects will of course differ methodologically at each of these four stages. However, the essential issues that derive from the analyses and warnings presented in the paper will have to be covered at all stages. The following summary of questions to be covered can be proposed for discussion of criteria for local-management-situation-appropriateness to be included in RESCCUE pilot- project methodology.

- a) What can really be expected from ESV in the specific context of pilot- project x? E.g.: what is the current state of public debates about biodiversity, ecosystem management and ecosystem services? What gap would ESV fill in the information currently used on the ground for public discussion and by public decision-makers? Are such expectations realistic in view of the state of decision-making deliberations on the ground? What are the strengths and weaknesses in terms of the available data for ESV?
- b) Are there apparent opportunities for PES deals that would fill an existing gap? Who would be the involved parties? Are there already existing deals (subsidies, policies or local rules, etc.) that are damaging to biodiversity and that could undermine the effectiveness of new PES? What changes ought to be made in that respect? What changes could realistically be made? Are there already existing policies and management arrangements the effectiveness of which could be increased by new PES?
- c) What teachings can be derived from implementation of conservation policies so far? E.g, what is the situation in terms of protected areas? Of EIA and permitting procedures about projects and programs that impact biodiversity? What light does it shed on opportunities and difficulties re ETBs?
- d) Who are the potential ETB-operators in the situation covered by the pilot-project? Are there promoters of biodiversity? Authorities with ambitious plans to better integrate environmental issues in planning and development? Both? How motivated by biodiversity outcomes are they? What is their position in terms of means for action, influence, authority, relations with other actors?
- e) What commitments have been made in the pilot-project area in terms of long term biodiversity conservation? What is the general level of commitment of public authorities? What specific commitments? With what gaps? How solid a foundation do the commitments provide for envisaged pilot-projects?
- f) What will be the overall strategy for operating the ETBs chosen for the pilot-project? What kind, what level of support can it mobilize, and from whom? What kind of difficulties is it likely to run into, and from whom?

What negotiation positions and strategies can be adopted for the pilot project?

The list may seem long, but it is difficult to envisage successful implementation and outcomes from projects that would not have adequately dealt with these questions. In our view the issue is now to find good ways to make them an integral part of RESCCUE methodology and implementation.

**Box 1. References of authors regarding economic instruments, valuation  
and the environment**

- Laurans, Y. & Mermet, L. 2014. Ecosystem services economic valuation, decision-support system or advocacy? *Ecosystem Services*, 7, 98-105
- Laurans, Y. 2015. Comment peut-on être économiste de la biodiversité ? *H&B, la revue d'Humanité et Biodiversité*, 1, 91-101.
- Laurans, Y., Leménager, T., Aoubid, S. 2011. *From Theory to Practice – What Are the Prospects for Developing Countries?* Coll. A Savoir N°7, AFD, Paris, 215 p.
- Laurans, Y., Pascal, N., Binet, T., Brander, L., Clua, E., David, G., Rojat, D., & Seidl, A. 2013. Economic valuation of ecosystem services from coral reefs in the South Pacific: Taking stock of recent experience. *Journal of Environmental Management*, 116, 135-144.
- Laurans, Y., Rankovic, A. Billé, R., Pirard, R. & Mermet, L. 2013. Use of ecosystem services economic valuation for decision making: Questioning a literature blindspot. *Journal of Environmental Management*, 119, 208-219.
- Mermet, L. 1981. « Elaboration d'une méthode d'évaluation des conséquences pour l'environnement des grands projets d'aménagement - le cas du Marais Poitevin ». Paris, SCORE / Ministère de l'Environnement.
- Mermet, L. 2003. « Concertations orchestrées ou négociations décisives? Tome 2 : Comptabiliser les enjeux pour éclairer les processus ». Paris, ENGREF/MEDD, Programme "Concertation, Décision et Environnement": 145.
- Mermet, L. 2005. « Concertations orchestrées ou négociations décisives? - Tome 1: Moments et modes de la recherche de l'accord sur les projets d'infrastructures qui mettent en jeu l'environnement et les ressources naturelles ». Paris, ENGREF / Ministère de l'Ecologie, Programme "Concertation, Décision et Environnement": 218.
- Mermet, L. 2009. Extending the perimeter of reflexive debate on Futures research: an open framework. *Futures* **41**: 105-115.
- Mermet, L. 2011. "Strategic Environmental Management Analysis: Addressing the blind Spots of Collaborative Approaches." *Pour le débat*. Iddri. Paris, SciencesPo. **5**: 31.
- Mermet, L., Laurans, Y. & Leménager, T., 2015. "Tools for what trade? Analysing the Utilisation of Economic Instruments and Valuations in Biodiversity Management" . September 2014. AFD, Paris, 348 p.

## ***References***

Barde, J.-P., Pearce, D., 1991. Valuing the environment. Six case studies.

Earthscan, London, UK

Cornes, R. and T. Sandler (1999). The Theory of Externalities, Public Goods and Club Goods. Cambridge, UK and New York, USA, Cambridge University Press.

Freeman III, M. (2003). The Measurement of environmental and resource values: theory and methods. Washington, DC, Resources for the Future.

Mohammed, E.Y. 2014, Economic incentives for marine and coastal conservation.

Earthscan from Routledge, 270 p.

OECD (2002). Handbook of Biodiversity Valuation: A Guide for Policy-Makers. Paris, France, OECD.

Pearce, D. W. and R. K. Turner (1990). Economics of Natural Resources and the Environment. Harlow, UK, Pearson Education Limited.

Sukhdev, P., Wittmer, H., Schröter-Schlaack, C., Nesshöver, C., Bishop, J., Brink, P.t., Gundimeda, H., Kumar, P., Simmons, B., 2010. TEEB - The Economics of Ecosystems and Biodiversity for National and International Policy Makers - Maintreaming the economics of nature - a synthesis of the approach, conclusions and recommendations of TEEB. United Nation Environment Programme, European Commission, The German Federal Environment Ministry, Department for Environment, Food and Rural Affairs, U.K., Ministry of Foreign Affairs of Norway, Ministry of Housing, Spatial Planning and The Environment, The Netherlands, Wesseling, Germany.