Step 3: Identifying ecosystem service opportunities

Now the more specific analysis of the situation commences. This step involves identifying opportunities to enhance conservation and development goals from an ecosystem services perspective. It can be seen as a diagnostic scoping tool with the following expected outputs:

- *Analysis of how ecosystem services relate to (local) issues, and of the extent to which there are trade-offs and synergies between provision of different ecosystem services.*
- *An understanding of how human activities and actors relate to ecosystem services, in particular who are the stewards, beneficiaries, and degraders of ecosystems.*
- *An assessment of the gaps, imbalances, and potentials regarding the costs and benefits people derive from ecosystems.*
- *This serves as entry points for improving current policy instruments or selecting new ones in Step 4.*

Figure 2 illustrates the six tasks of Steps 3 and 4 together. They are the conceptual core of the ESO approach.

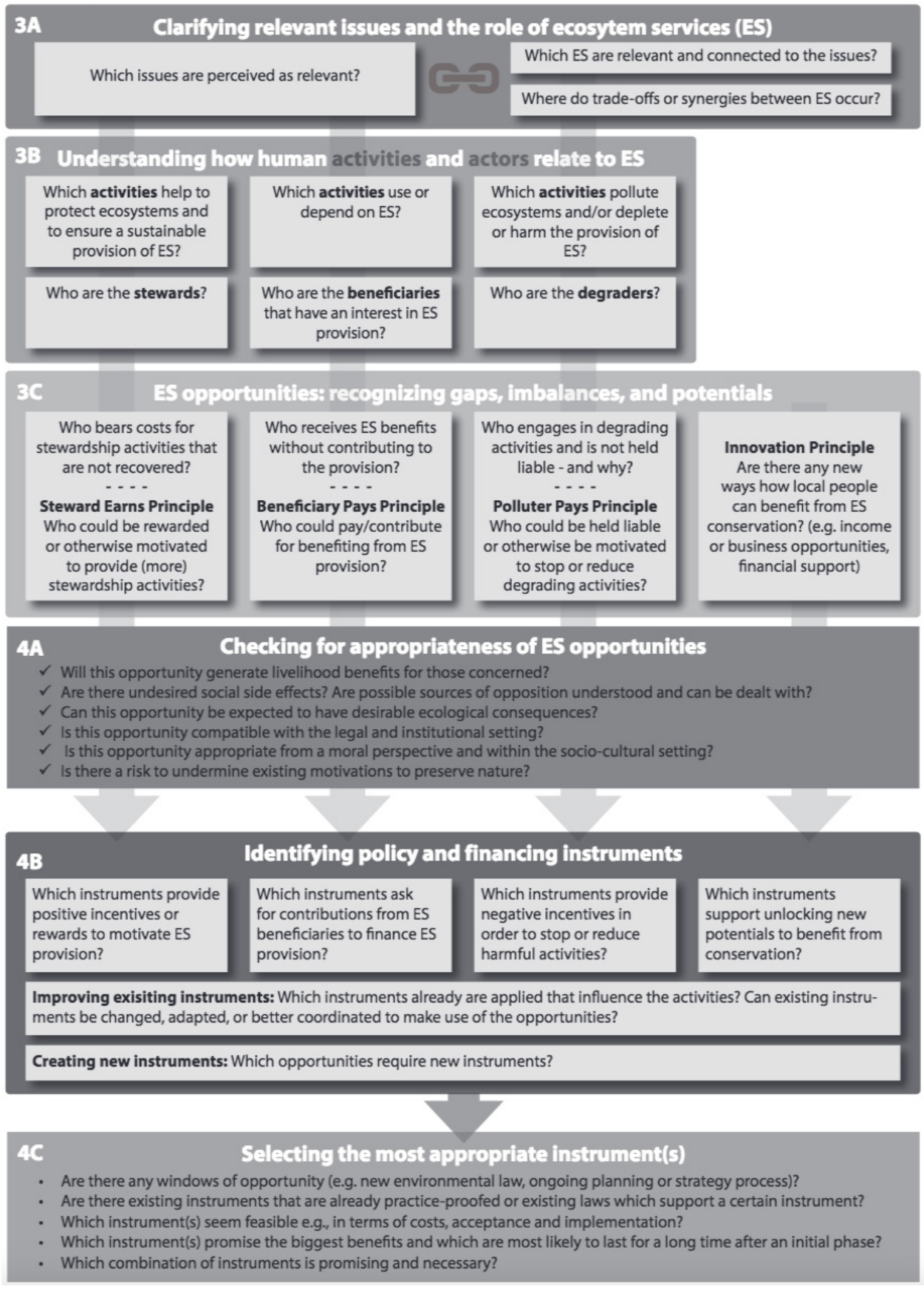

Figure 2: The ecosystem service opportunities framework

Task 3 A. Clarifying relevant issues and the role of ecosystem services

What this task is about

The task here is to clarify which issues or questions are of primary concern to stakeholders and to understand how they are linked to ecosystem services. Stakeholders could be interested in objectives such as:

- Mitigating current problems with water regulation and provision (floods or droughts)
- Decreasing or halting over-exploitation of resources (fish, timber, NTFP, etc.) or supporting existing efforts towards sustainability
- Decreasing habitat loss or support existing efforts to improve habitats or habitat connectivity (e.g. wildlife corridors)
- Helping to solve human-wildlife conflicts
- Reducing pollution of ecosystems (e.g. of rivers) and its health impacts
- Supporting sustainable land use, in particular sustainable agricultural practices
- Improving soil quality by reducing erosion or soil degradation
- Supporting agricultural extension to improve productivity in a sustainable manner
- Reducing poverty or indebtedness.

A **stakeholder workshop** at this point can be vital to make sure you do not miss out on important aspects as well as to help people understand why you are doing this process and why it should matter to them. If they do not see that the process is designed to tackle their concerns and problems, they probably will not get properly involved and might ignore or even oppose it. In addition, collaborating with stakeholders in defining relevant issues and the role of ecosystem services can be important in its own right. It provides a forum or platform for stakeholders to learn about and discuss the socio-economic and biophysical conditions within which they operate, and which they seek to change.

At the same time, **important ecosystem services** provided by nature in the area should be assessed and related to the issues at stake. There are various types of ecosystem services. The Millennium Ecosystem Assessment (MA 2005) is a well-known resource as is, more recently, the Common International Classification of Ecosystem Services (CICES). The Appendix A provides a detailed list of the single ecosystem services based on TEEB (2010). All of them include the following:

- **Provisioning services** are the materials that ecosystems provide, such as food, water and raw materials. For instance, an ecosystem may provide the conditions for agricultural production or fisheries; a forest provides wild goods, plants and wood. Natural ecosystems are also important for water regulation and purification.
- **Regulating services** are services that ecosystems provide by maintaining the quality of air and soil, stabilising the climate, providing flood and disease control, or pollinating crops. For instance, many ecosystems remove greenhouse gases from the atmosphere and help to stabilise the climate. Dense vegetation can prevent overheating and help to regulate humidity. Additionally, it stabilises the soil and prevents erosion. Wetlands can absorb and store water during floods events, and can filter out harmful substances. Insects and birds are essential for maintaining natural pollination.
- **Habitat or supporting services** underpin almost all other services. Ecosystems provide living spaces for plants and animals and maintain their diversity. For instance, well-developed natural ecosystems provide different habitats for different kinds of species. A high diversity of species guarantees a greater gene pool and thus the maintenance of genetic diversity.

- **Cultural services** are the non-material benefits of ecosystems – from recreation to spiritual inspiration and mental health. For instance, some cultures have a deeply religious relationship with nature. Other natural ecosystems may have high tourism potential.

How to represent and communicate the multiple values of nature

There is an ongoing debate, driven by the academic community, about how to adequately represent and communicate the values of nature. The ecosystem services concept was first introduced in the 1980s, but the Millennium Ecosystem Assessment (MA 2005) and the TEEB (2010) initiative had a big impact on its use in policy and management. Since then, the ES concept has also been criticised and conceptual advances have been proposed. For instance, the notion of **relational values** is meant to better represent human-nature relationships where nature does not really provide a one-directional cultural "service" to people. The concept of **Natures Contributions to People (NCP)** proposed in the context of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) has a similar objective to put more emphasis on the diverse cultural and context-dependent components that characterize people's interactions with the natural world. Other concepts emphasize aspects of ethical duties, rights, care, or inherent values of nature, which are not adequately captured by the anthropocentric (i.e., human-centered) and instrumental perspective of the ecosystem services concept.

The authors of this ESO framework fully sympathize with attempts to achieve a more balanced view of human-nature relationships and we invite the users of these guidelines to adapt terminology and concepts as they deem fit for the context in which they work. For the purpose of selecting and designing policies, we believe that the ecosystem service perspective can be useful and already take you a long way towards better integrating values of nature into decisions and policies.

Suggested academic reading:

Chan et al. (2016), Why protect nature? Rethinking values and the environment, Proceedings of the National Academy of Sciences 113(6), 1462–1465.

Himes and Muraca (2018), Relational values: the key to pluralistic valuation of ecosystem services, Current Opinion in Environmental Sustainability 35, 1–7.

Díaz et al. (2018), Assessing nature's contributions to people, Science 359 (6373), 270-272.

To understand the relevance of different ecosystem services in the local context, it is also important to understand **trade-offs** in the provision of different services, as well as **synergies**. A typical trade-off occurs when an increase in food provision through intensive agriculture means a decrease in biodiversity and the provision of other services (e.g. carbon sequestration or water regulation provided by a natural forest). Table 1 presents examples of trade-offs involved in selected land or resource management actions.

Table 1: Ecosystem services trade-offs (adapted from WRI 2008a)

Action to be taken	Goal	Who might gair	Ecosystem services decreased	Who might lose out
Increasing one service at the expense of other services				
Draining wetlands for farming	Increase in crops, livestock	Farmers, consumers	Natural hazard regulation, water filtration and treatment	Local communities including farmers and some downstream users of fresh water
Increasing fertiliser application	Increase in crops	Farmers, consumers	Fisheries, tourism (as a result of dead zones created by excessive nutrients)	Fisheries, industry, coastal communities, tourism companies
Converting forest to agriculture	Increase in timber (temporary), crops, livestock, and biofuels	Logging companies, farmers, consumers	Climate and water regulation, erosion control, timber, cultural services	Local communities, global community (from climate change, biodiversity loss), local cultures
Converting ecosystems and their services into built assets				
Coastal development	Increase in capital assets, creating jobs	Local economy, government, developers	Natural hazard regulation, fisheries (as a result of removal of mangrove forests or wetlands)	Coastal communities, fisheries, industry (local and foreign), increased risks to coastal businesses
Residential development replacing forests, agriculture or wetlands	Increase in capital assets, create jobs	Local economy, government, developers, home buyers	Ecosystem services associated with removed ecosystems	Local communities, original property owners and downstream communities
Competition among different users for limited services				
Increased production of biofuel	Reduced dependency on foreign energy	Energy consumers, farmers, government	Use of crops for biofuels instead of food	Consumers (rising food prices), livestock industry
Increased water use in upstream communities	Developing upstream areas	Upstream communities, industries	Water downstream	Downstream communities, industries

How to go about Task 3 A

Start by identifying the important conservation and development issues to be addressed and link them to ecosystem services. Don't worry if there seem to be more issues than you can tackle: relationships between issues may become clearer during the process, so you don't want to forget anything. Nevertheless, you need to agree which issues are the most relevant and which are only to be kept in mind. At this stage, a first stakeholder workshop can play a central role. It can serve to jointly identify the relationships between relevant issues and ecosytem services as required for Task 3A, but also addresses Tasks 3B and 3C. Detailed guidance for planning and organising workshop can be found in the resources

section of the website. In some cases several small workshops with sub-groups of stakeholders might make sense, or bilateral consultations - for instance, where there is potential conflict between different groups. You can also confirm and complement the workshop results by consulting experts. By the end, you should be able to fill in the cells of **Template 3A**.

Template 3A: Clarifying relevant issues and the role of ecosystem services (examples from Kochi, India)

Which issues are perceived as relevant?

Few mangrove patches remaining in and around Kochi, remaining ones tend to be degraded/polluted

Mangalavanam as well-known piece of nature in city center is increasingly polluted and disturbed

Which ecosystem services are relevant and connected to the issues?

- education (birds, biodiversity): nature interpretation center, education camps
- recreational use: nature walks (locals and tourists)
- aesthetic and inspiration for arts
- pollination through insects, birds and bats
- biological control of predator activities
- provision of food, raw material, fresh water and medicinal resources
- carbon sequestration
- prevention of erosion
- buffer against flood events
- prevent salt water intrusion
- local climate regulation and reduction of heat stress
- improve air quality
- water purification
- biodiversity habitat
- maintenance of genetic diversity

Where do trade-offs occur and how?

Most trade-offs between polluting activities and ecosystem services

Where do synergies occur and how?

Many synergies between the ecosystem services provided by healthy mangroves

Task 3 B. Understanding how human activities and actors relate to ecosystem services

What this task is about

In this task you systematically assess how human activities and actors relate to or interact with the relevant ecosystem services, according to three types of role:

ES stewards are actors who undertake activities that help protect ecosystems and to ensure a sustainable provision of ES. Clearly, nature is the primary provider of ecosystem services, but people and their activities often play an important part. The ability of an ecosystem to generate important services without losing quality depends to a large extent on how that ecosystem is managed, and whether it is actively protected from degradation. Which actors help manage ecosystems or otherwise contribute to ES provision, e.g. farmers, forest or wetland managers? In some cases, it is not only important to identify current ES stewards; to achieve positive change you also need to consider possible future stewards: who could help protect ecosystems and ES in the future? Don't forget those who have been providers in the past: could they take that role again?

ES beneficiaries are those actors who benefit from ecosystem services in some way and so have a direct or indirect interest in their provision, or even crucially depend on them for their livelihoods. What are the human activities that use or depend on ES? Benefits can occur locally, for instance when the local population benefits from clean water, NTFPs, erosion prevention, or the view of a beautiful landscape. They can also occur further away (e.g. a downstream municipality benefiting from flood prevention, or a company benefiting from clean and stable water flow) and may even be felt on a national or global scale (e.g. preserving natural heritage, carbon sequestration to mitigate climate change).

ES degraders pollute ecosystems and deplete or harm the provision of ecosystem services. Degrading human activities can involve chemical pollution from industrial or mining activities, but also by overuse of natural resources such as fish or timber. It is important not to judge such damage out of hand as immoral. Converting land for agricultural use to enhance production of food or raw materials (i.e. provisional services), for instance, almost always involves some harm to other services provided by natural ecosystems. Rather than judging or blaming, the objective at this point is to understand the consequences of different human activities.

ES providers, beneficiaries and degraders are not always different people. One may simultaneously be a provider and a beneficiary or even a degrader of ecosystem services. For example, consider a farmer in a watershed area who depends on insect pollination and pest control services (and so is a beneficiary), conserves the natural forest on part of his land and grows crops (and so is a provider) while clearing primary forest on another piece of land and allowing agrochemical runoff to drain untreated into a nearby river (and so is a degrader). Similarly, the same management practice might be seen as degrading in one context and providing in another. For example, draining peat land has negative (carbon release) and positive effects (enhancing soil fertility).

Terminology needs to be adapted to the local context!

When using the ESO guideline in Palau, it became clear that all landholders within the community are regarded as stewards of the land, regardless of whether they are involved in activities that protect or degrade ecosystems. Therefore, it was important at the workshop to specify the activities that promote or degrade ecosystems rather than identifying actors or groups that are stewards or degraders.

How to go about Task 3 B

At this point you are trying to understand, map, and describe the relationships between human activities, actors, and ecosystem services as comprehensively as possible. At later stage, you can decide the most relevant aspects to focus on. The second exercise in the plan for a stakeholder workshop (see Appendix B) has exactly this objective and the results of this exercise should provide valuable input. Internal discussions among the team and expert consultations can complement the outcomes of the workshop. By the end, you should have filled in **Template 3B**.

Template 3B: Understanding how human activities and actors relate to ecosystem services (examples from Kochi, India)

Which activities help to protect ecosystems and to ensure a sustainable provision of ES? (by conserving biodiversity or managing ecosystems) Who are the stewards?		**Which activities use or depend on ES? Who are the beneficiaries that have an interest in ES provision?**		**Which activities pollute ecosystems and/or deplete or harm the provision of ES? Who are the degraders?**	
activities	actors	activities	actors	activities	actors
• mangrove management	• coastal zone authority / Indian coast guard / navy (national) • protected areas managed by forest department	• fishing (mangrove for breeding and nursery)	• fisherman and communities consuming fish • fishing industry • boat tour operators	• Cochin shipyard port activities • Kochi LNG (liquid natural gas) terminal construction for offshore storage and transport destroy mangroves	• households with sewage • constructors • Indian navy (dredging) • Indian coast guard (dredging) • Indian national railways (cut down mangroves
• Management and protection of Mangalavanam	• Kerala Forest Department • Kochi Municipal Corporation	• Leisure trips, including boat tours (for pleasure, recreation, physical & Mental Health)	• Public visitors • Tourism operators • morning walkers	• Incompatible land use in surrounding area (with high buildings)	• Corporation GCDA • Railway • Developers • High court • KMC • Govt. of Kerala • Private builders
• Eco-friendly tourism	• DTPC • Private Agencies	• Nature Camps and education activities	• Students • general public • neighborhood • KFD	• Light and noise pollution in surrounding area	• Local public and households • high court building • traffic
• Research	• KFRI • CUSAT • SACON • Colleges	• Climate protection efforts	• Agencies responsible for climate protection • Global community	• Improper drainage system and destruction of natural drainage	• Govt. bodies • Local bodies
• Buffer zone protection	• Kerala State	• birdwatching	• bird watchers • tourism operators	• Introduction of exotic plants and predators	• Forest Department • Natural invasion

Task 3 C. Recognizing gaps, imbalances, and potentials

What this task is about

Once the objectives and spatial scope have been specified and the core team formed, it is necessary to plan how the process will be carried out in practical terms. Preparing a work plan involves thinking through and organising four main aspects:

- The tasks to be carried out and outputs to be generated
- The inputs and budget required to carry out these tasks and deliver these outputs
- The schedule and responsibilities for delivering different components of the assignment
- How it will be funded and resourced.

For each task and output, this basic work plan will usually specify the start and end date, location, person(s) responsible for delivery and resources required.

Each identified **task and output** needs to be costed in terms of **input requirements**. Inputs are the intellectual, material, financial and other resources needed. Without sufficient resources, the process cannot be carried out. At a minimum, these should cover staffing and technical inputs, equipment, consumables and other materials, purchase of data, travel and transport expenses, meetings and workshop costs. Estimates should also be made of how long each task or output will take to complete. You need to consider both cash costs (i.e. those which involve purchases such as fuel or notebooks) and in-kind contributions (i.e. those which are free or already paid for, such as staff time, a meeting room, or use of a computer).

You need to ensure sufficient and timely funding and resourcing to cover the costs. Although an adequate **budget** is sometimes already available, in many cases it will be necessary to go out and search for funding, contributions, staff time and other inputs (or even to justify the use of already existing funds). Your budget and work plan provide the basic information for putting together a funding request or project proposal. Any contributions from partner communities, team members or their institutions (e.g. of time, materials or other resources) should also be confirmed at this point.

Practitioners often underestimate the extent to which the **application of economic principles to nature conservation involves ethical dimensions**. To begin with, the most common economic principles are rooted in considerations of distributive justice. For instance, the Polluter Pays principle aims to prevent people from profiting at the expense of - or even by harming – others. Similarly, having beneficiaries contribute to the costs of natural resource management is essentially a dictate of fairness. It is hardly just, when for instance a poor local farmer or a cash-strapped government department effectively subsidises the provision of ecosystem services to richer urban populations or profit-making industries. By tackling imbalances in who benefits from nature's services and who bears the costs of maintaining or enhancing them, policy instruments based on the economic principles are essentially a means to re-allocate resources and enable fairer distribution. Highlighting this argument can be helpful when communicating the merits of economic instruments to stakeholders.

Which ES beneficiaries receive benefits without contributing to their provision? Consider these examples:

- A large and profitable brewery relies on a stable flow of clean water from a watershed, which in turn depends on sound farming practices or other aspects of good watershed management. Yet the company as beneficiary does not contribute to the cost of provision – it obtains clean water for free.
- A famous hotel reaps large profits as a high-end tourist destination partly due to the scenic beauty of a national park area, but does not contribute to the costs of park management.

- A pharmaceutical company engages in profitable bio-prospecting activities in a large tropical forest area (i.e. the discovery and commercialisation of new products based in biological resources), but does not participate in conservation efforts.
- Local users of coastal infrastructure and settlements that are protected from storm damage by coral reefs or mangrove forest, yet local authorities do not contribute to conservation management.
- Divers and snorkelers enjoy for free the coral reefs of a coastal protected area, or hikers and mountaineers enjoy the facilities of a scenic mountain national park.

In all these cases, there is an imbalance in that beneficiaries receive benefits for free. This can in some cases be seen as unfair, especially if commercial benefits are made based on stewardship efforts by others or by the government. Based on the **'Beneficiary Pays Principle'**, you should ask **who could pay or otherwise contribute for benefiting from ES provision**. In that case, policy instruments such as taxes, charges, or user fees could oblige beneficiaries to contribute their fair share to ecosystem management (see Step 4B). Since the provision of ES is important or essential to the beneficiaries and they would suffer consequences if they were no longer provided, they may even be voluntarily willing to support efforts to maintain their provision, for instance within voluntary payment schemes or corporate sponsorship. Beyond maintaining the current level, it is also important to check which beneficiaries are interested in more ES provision. For instance, hydropower companies may wish to reduce the sedimentation rate in the river, or farmers or residents near a river may wish to stabilise the water flow to reduce the risk of flood and drought. In these cases there is a gap in the current provision of ecosystem services, and the potential beneficiaries may be interested in supporting efforts to increase their provision.

Who engages in degrading activities and is not held liable – and why? In economic terms the harm to others caused by ES degradation is called a 'negative externality'. Some impact on ecosystem services may already be regulated, such as the effect of pollution or pesticide use on water quality. Yet the degradation of many ecosystem services is still disregarded in law or in economic policies such as concessions or agricultural subsidies. Negative externalities which are ignored could include coastal erosion (e.g. by cutting down mangrove forests); river bank erosion; downstream sedimentation; changes in water regulation or the micro-climate (e.g. when replacing agro-forestry systems with monocultures); or a decrease in carbon sequestration (typically by deforestation). The harm to aesthetic or spiritual values (i.e. cultural ecosystem services) is equally often neglected. You should seek to understand and outline which negative impacts on ecosystem services are currently neither formally nor informally regulated.

Based on the '**Polluter Pays Principle'** you can ask **who could be held liable or otherwise be motivated to stop or reduce degrading activities**. Examples include penalising the pollution of a river that others use for fishing or for drinking water, or creating liability schemes for a sand-mining company that causes erosion and downstream siltation. This is an opportunity to generate funds to remedy or mitigate such damage, and to discourage actors from causing it in the first place. Many regional or national compensation requirements and liability regulations already apply this principle, mainly to corporate activities. But in the case of damage to ecosystem services there are still opportunities for new or more effective instruments as fines or offsetting schemes, or voluntary payments within PES schemes (see Step 4B).

The last category of ecosystem service opportunity relates to the potentials based on what we call the **Innovation principle** and asks for **new ways how local people can benefit from ES conservation.** It comprises untapped income or business opportunities based on biodiversity or environmentally beneficial production systems. The aim is to find possibilities to access or create new markets and value-adding processes that enhance benefits to people while at the same time preserving biodiversity. Various types of green markets and green products are raising their profile throughout the world to add monetary value to conservation efforts, ranging from more traditional products such as ecotourism or organic foodstuffs to non-traditional markets in forest carbon, biodiversity offsets or forest bonds. Inno-

vation can also focus on enhancing the efficiency and scope of existing eco-markets and business opportunities, or participation in them. Examples include: developing REDD+ as a form of carbon financing that explicitly benefits local communities and protected areas; providing necessary credit or training to enable protected area residents to invest in developing ecotourism facilities and services; or negotiating premium prices and purchasers for products that are sustainably produced. Such opportunities tend to need significant financial investment or capacity support. This is a huge challenge when entrepreneurs are local communities without financial resources or business expertise.

Not every opportunity that follows the logic of the economic principles will be appropriate in practice or achievable under existing conditions and endowments!

It is not always appropriate to reward ES provision! Laws or duty of care rules may already require ES provision. For instance, in order to prevent erosion and landslides it is often legally prohibited to cut trees in hilly areas, and many forms of extractive land and resource use are restricted or banned altogether within protected areas. In such cases it is usually neither appropriate nor legally feasible to pay people to stop doing what is illegal anyway. In other cases, there are no formal laws in place but an understanding and acceptance of ethical norms or standards: for instance, what constitutes good agricultural practice is recognised in many countries without being defined by regulations. Or, should society compensate large-scale landholders who are already one of the wealthiest groups in the region for sparing some of their land to help biodiversity conservation and ecosystem services provision?

It is not always appropriate to ask beneficiaries to contribute! Paying for ecosystem service benefits can be ethically or culturally unacceptable. No one expects to pay to breathe clean air or to rest in the shade of a tree, and in many socio-cultural contexts it would be considered wrong to have to pay to enjoy the beauty of a forest and the relaxing sound of the sea, or to collect mushrooms or herbs in a state-owned forest.

It is not always appropriate for ES degraders to compensate for damage! There is sometimes a thin line between one person's legitimate rights or freedom of action and other people's right not to be harmed by them. For instance, when a farmer cuts down trees on his own property and thereby harms downstream communities by negatively affecting water regulation, it may be considered his legitimate right to do so, outweighing the negative external effect. The same may hold for using pesticides to boost production which also pollutes the ground water. Perhaps ban or standards regarding the use of the pesticide would be more appropriate than a compensation payment? Questions of rights and responsibilities cannot be solved by economic reasoning, but are subject to societal norms and perceptions of justice.

Not all innovative business opportunities should be pursued! There are many reasons why potentially profitable innovations may not be suitable. For instance, paying for access to what is considered sacred land may not be an option for local communities. Profiting from bio-prospecting can be considered as bio-piracy if the benefits are not shared with traditional knowledge holders. Profitable wildlife tourism or the use of wetlands for waste water treatment may go beyond the carrying capacity of an ecosystem

How to go about Task 3 C

As in the previous tasks of Step 3, the stakeholder workshop can be used to identify gaps, imbalances, and potentials. This can then be complemented by information from other sources via consultations, key informant interviews, local experts, etc. By the end, you should have filled in **Template 3C**.

Then, you should critically check for the appropriateness of each of the opportunities (see yellow box). Our experience in applying the framework in practice has shown that inappropriate or unfeasible opportunities will typically not be considered in the first place. Nevertheless, discussing the following questions with your team and key stakeholders serves as an additional safeguard, and they can also help to identify additional conditions or areas of support needed to successfully implement an opportunity:

- Will this opportunity generate livelihood benefits for those concerned? Would any vulnerable group lose out?
- Are possible sources of opposition (especially by powerful actors) understood and can they be dealt with?
- Can significant risks of undesirable ecological consequences be ruled out, or can they be dealt with?
- Is this opportunity compatible with the legal and institutional setting?
- Is this opportunity appropriate from a moral perspective and within the socio-cultural setting?
- Can you rule out that existing motivations to protect the environment/nature would be undermined, or can it be dealt with?

Template 3C: ES opportunities - recognizing gaps, imbalances and potentials (examples from Bu Phram, Thailand)			
Steward Earns Principle **Who bears costs for stewardship activities that are not recovered? Who could be rewarded or otherwise motivated to provide (more) stewardship activities?** • Farmers could be rewarded (payments, honor certificates, technical assistance, etc.) for organic and wildlife-friendly agriculture and native tree restoration; • Farmers on Thap Lan side could receive security that native vegetation recovery will not lead to loss of land use rights; • Local authorities could be supported in their efforts towards sust. dev. by provincial and national authorities; • NP management could receive additional funds for restoration via benefit-sharing scheme.	**Beneficiary Pays Principle** **Who receives ES benefits without contributing to the provision? Who could pay/contribute for benefitting from ES provision?** • Local tourism and shopping operators could contribute to grassland and palm tree restoration; • Community organization for Lan palm production could support sustainable harvesting on productive land and enforce non-use of Lan trees in forest; • "Verona resort" owner could contribute financially, with land donation (on Khao Yai side), and promote "sustainable business" in the area; • Local drinking water producers could contribute financially. • National and international conservation organizations could provide funds.	**Polluter Pays Principle** **Who engages in degrading activities and is not held liable - and why? Who could be held liable or otherwise be motivated to stop or reduce degrading activities?** • "Verona resort" owner could be asked to reduce and/or compensate for his impacts (e.g., run-off from stables) • Speeding on highway 304 and road kills could be pursued and punished.	**Innovation Principle** **Are there any new ways how local people can benefit from ES conservation? (e.g. income or business opportunities, financial support)** • Ecological product certification; new markets for sustainable Lan products • Nature-based tourism (wildlife watching, bike tours, homestays, etc.) • Educational activities (wildlife, Lan education center)

Once developed, the work plan should be flexible enough to adapt, so you should take time for regular review, revision and updating. Bear in mind that it is very common to be over-ambitious (or even unrealistic) when first designing your project. Once the resource requirements are known, it may be necessary to review your tasks and outputs – budgets frequently need to be revised downwards in the light of actual time, funding and staff availability.

Selected references and further guidance for Step 3

Guidance on identifying and prioritising ecosystem services and their benefits

The Assessment Guide 'Social and Economic Benefits of Protected Areas' (Kettunen and ten Brink 2013), especially part 2, Step 1, offers a comprehensive introduction to the socio-economic benefits of PAs and PA networks and provides step-by-step practical guidance on identifying, assessing and valuing the various ecosystem services and related benefits provided by Protected Areas (Task 3A).

Steps 2 and 3 of the six-step approach within the manual 'Integrating Ecosystem Services into Development planning' (Kosmus et al 2012) developed by GIZ provides guidance for identifying key ecosystem services, their current conditions, trends in supply and demand, and drivers that are responsible for changes (Task 3A).

URL: http://www.aboutvalues.net/data/six_steps/integr_ecosys_serv_in_dev_planning_en.pdf

Chapter 3 of the Millennium Ecosystem Assessment Manual for Assessment Practitioners (Ash et al 2010) provides guidance on identifying and prioritising ecosystem services (Task 3A).

URL: http://www.unep-wcmc.org/resources-and-data/ecosystems-and-human-wellbeing--a-manual-for-assessment-practitioners

Chapter 3 of the Ecosystem Services: A Guide for Decision Makers (WRI 2008a) provides further guidance on identifying and prioritising ecosystem services (Task 3A).

URL: http://pdf.wri.org/ecosystem_services_guide_for_decisionmakers.pdf

'The Protected Areas Benefits Assessment Tool (PA-BAT)' (Dudley & Stolton 2009) provides a methodology for identifying the different types of current and potential benefits of protected areas. It also assesses who benefits and by how much, and aims to reveal the degree to which particular benefits are linked to protection strategies. The tool can be helpful for task 3A in assessing the benefits of a particular area and in drawing conclusions from its ecosystem services and how they relate to management issues. The tool can also be helpful for task 3B in order to identify the beneficiaries of ecosystem services.

URL: http://wwf.panda.org/?174401/PABAT