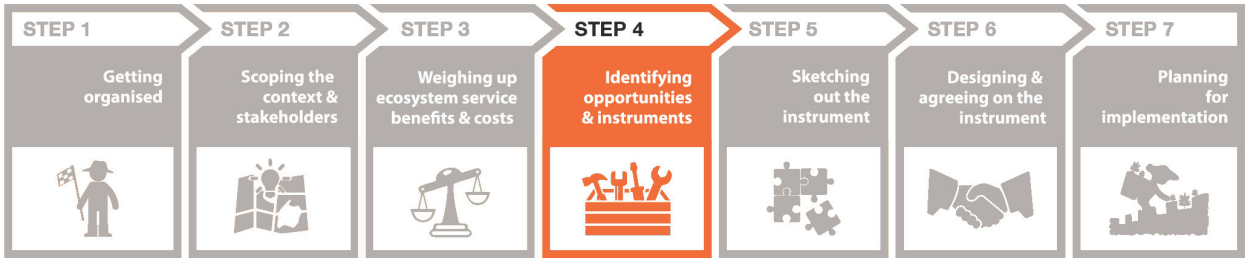
Step 4: Identifying opportunities and instruments



Once gaps and imbalances in the provision and distribution of ecosystem services have been recognised, it is possible to identify economic opportunities to initiate positive change. This step involves identifying opportunities to capture ecosystem service values and making an initial selection of suitable economic instruments. Its expected outputs are:

- An overview of ecosystem service opportunities that can address imbalances in the costs and benefits of conservation or tap into innovative business opportunities
- To confirm whether or not the opportunities are worth pursuing
- Ideas for suitable economic instruments.

Task 4 A. Identifying ecosystem service opportunities

At the end of Task 4A you will have specified the ecosystem service opportunities that arise, based on four basic economic principles. You will have filled in the first two columns of Template 7.

What this task is about

As illustrated in Figure 2, we distinguish four types of opportunity. Three types directly link a specific stakeholder role (ES provider, ES beneficiary, ES degrader) to general economic principles, namely the principles of 'Steward Earns', 'Beneficiary Pays', and 'Polluter Pays'. A fourth type concerns 'Innovation': business opportunities based on ecosystem services, through which local communities may benefit from conservation.

Steward Earns: which ES providers could be rewarded for their efforts?

The Steward Earns principle involves rewarding ES providers or compensating them for the costs they incur in providing ecosystem services. For example, landholders in the buffer zone of a protected area might refrain from certain land-use practices in order to maintain the natural habitat for endangered species, or assist in tree planting, patrolling and fire management activities. Financing or rewarding such conservation actions (whether direct management costs or opportunity costs) can motivate providers to maintain or even enhance ES provision. Many economic instruments build on this principle, including the provider side of PES schemes, eco-subsidies, stewardship payments, conservation easements, and debt-for-nature swaps.

Beneficiary Pays: which ES beneficiaries could contribute to the provision of ecosystem services?

In the Beneficiary Pays principle, actors who benefit or profit from ecosystem services are asked to contribute to the costs of conservation. Examples include a beer or water bottling company that relies on a stable flow of clean water from a well-managed watershed, users of coastal infrastructure and settlements that are protected from storm damage by coral reefs and mangrove forests, or hikers and mountaineers who enjoy the facilities of a scenic

national park. They are asked to make some form of payment (financial or other) for the benefits they derive from ecosystem services or to contribute to the cost of their maintenance. Moreover, beneficiaries may be willing to support increased provision of ecosystem services useful to them. Several economic instruments exist to operationalise the contributions, such as the beneficiary side of PES schemes, conservation funds, taxes, charges, user fees, or corporate sponsorship.

Polluter Pays: which ES degraders can be held liable for damage, so that they reduce or stop harmful activities or at least compensate for them?

In the Polluter Pays principle, ES degraders are held liable and asked to compensate for the damage ('negative externalities') that they cause, or to stop their harmful 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 and better economic instruments, such as fines or offsetting schemes, including voluntary payments within PES schemes.

Innovation: what are new ways for people to tap into business opportunities and financing schemes in order to benefit from ecosystem services and biodiversity?

The last category of ecosystem service opportunity is based on what we call the Innovation principle. It comprises untapped business opportunities based on ecosystem services, and possibilities to access or create new markets and value-adding possibilities. The aim is to find new ways to 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. Innovation can also focus on enhancing the efficiency and scope of existing ecomarkets 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 business 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, and economic and financial instruments clearly play an important role.

Practitioners often underestimate the extent to which the **application of economics 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 compensate providers for the costs of natural resource management (according to the Beneficiary Pays and the Steward Earns principles) is essentially a dictate of fairness. By tackling imbalances in who benefits from nature's services and who bears the costs of maintaining or enhancing them, economic instruments are essentially a means to reallocate resources and enable fairer distribution. Highlighting this argument can be helpful when communicating the merits of economic instruments to stakeholders.

How to go about Task 4 A

Template 7 can be used to fill in the information for Tasks 4 A–C. Before identifying the ecosystem service opportunities, it is useful to provide a rough outline of the desired outcome. You can formulate this in terms of

safeguarded ecosystems, increased provision of ecosystem services, or reduced threats (e.g. of floods or drought). Describe what activities are needed to improve the current situation: for instance, farmers may need to change their land use or agricultural management practices. Write the desired outcomes in the first column of Template 7. Then, working directly from the gaps and imbalances identified in Task 3C, think of opportunities based on the first three economic principles: Steward Earns, Beneficiary Pays, and Polluter Pays. Also think of possible business opportunities based on the Innovation principle.

You may involve stakeholders in coming up with ideas and this might have already happened in the first stakeholder workshop. But be cautious: in generating ideas about opportunities you need to reflect on how appropriate they are to the local context (see next Task 4B). The second column of Template 7 serves to formulate the opportunities.

Task 4 B. Checking for appropriateness of ES opportunities

At the end of Task 4B you will have reflected on each of the opportunities identified in Task 4A, and decided whether it is appropriate to pursue them further. You will have filled in the third column of Template 7.

What this task is about

In this task you are asked to reflect critically on the appropriateness of the opportunities, often considering factors outside the domain of economics. Not every theoretical opportunity identified from an economic perspective will be appropriate in practice or achievable under existing conditions and endowments.

The **distribution of rights and obligations** (of property, access, or use) is the reference point for determining which economic principles to use. For instance, adherents of economic thinking often propose paying farmers to stop polluting water with pesticides or degrading biodiversity on their land. This is the logic behind many PES schemes: a beneficiary of ecosystem services is asked to pay and money is transferred to the providers. However, proposing such an economic instrument supports the view that land owners may act freely on their own property, even if it negatively affects other members of society. Conversely, if the right of all people to clean air or water was the priority, the land owner could be implicitly bound to care and provide. Under the Polluter Pays principle he could be obliged to stop or reduce pollution or else be held liable for it. Defining such rights and obligations is essentially a political and legal decision, reflecting perceptions of justice in the socio-cultural context. If rights and obligations are already defined (whether formally in legal terms or informally within culturally accepted norms - e.g. the duty to care or the right to water), then proposals for new instruments that disregard them are likely to face resistance and fail. On the other hand, if rights and obligations are undefined, the choice of economic principles and instruments effectively defines them. In this case, groups that benefit from the current lack of regulation may oppose the new instrument.

Moreover, **ethical aspects** may call for caution in the application of economics, particularly market-based instruments such as emission trading or habitat offsetting. Markets control access to goods and services by deciding how much they will cost. This means that people can only have what they can afford, as opposed to a system of equal distribution or a policy of access according to need not purchasing power. Moreover, many people intuitively reject the use of economic terminology in relation to nature, regarding beauty, wildness, sacredness, etc. as being outside the economic domain in the same way as love or friendship. Taking ethical consideration seriously can help to construct a broader set of values around nature and to ease such reservations, but it is wise to anticipate and understand possible opposition to economic approaches and to select instruments which are workable in a specific socio-cultural context.

Here are some situations or examples in which it might be inappropriate or impractical to pursue ecosystem service opportunities:

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 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, consider large-scale landholders who are already one of the wealthiest groups in the region. Should society still compensate them 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 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. On the other hand, moral considerations can work in favour of contributions from beneficiaries: for instance, when 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.

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, should he be made to compensate for the negative external effect or does he have the right to do what he wants on his own land? When pesticides boost production in a large agricultural plantation but also pollute the ground water, should the owner be asked to compensate for the damage caused or is it more appropriate to ban the use of the pesticide? Such questions of rights and responsibilities cannot be solved by economic reasoning, but are subject to societal norms and perceptions of justice.

It is also possible that polluters who have already paid the fine for their actions may feel entitled to continue. Even if this generates further compensation for those who are affected, it undermines the objective of reducing the damage or stopping it altogether.

Example of the appropriateness of applying the Polluter Pays principle

In the ECO-BEST sites, most opportunities based on the Polluter Pays principle were quickly disregarded. In Thadee, addressing the impact of sand-mining companies on riverbank erosion was seen as too conflictive. In all three sites, introducing new liability schemes for activities on private land (e.g. pesticide use, construction, run-off from stables, and conversion to mono-cropping) seemed beyond the scope of the project. The only opportunity pursued in Pang-Ma-O, albeit on a voluntary basis, was to ask the agricultural bank to which the villagers were in debt to support community-based measures of forest conservation.

Should all innovative business opportunities 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 what is desirable from an ecological perspective.

How to go about Task 4 B

Our experience in applying the framework has shown that inappropriate or unfeasible opportunities (e.g. asking for payment for clean air, rewarding people for obeying the law, selling access to sacred places, etc.) will not in fact be considered. Nevertheless, the following questions serve as an additional safeguard, and they can also help to identify additional conditions or areas of support needed to successfully implement an opportunity. We suggest that you discuss them within your team and with key stakeholders:

- Will this opportunity generate net livelihood benefits for those concerned? Are there (undesired) side effects for other groups?
- Are possible sources of opposition understood and can they be dealt with?
- Is this opportunity likely to have desirable ecological consequences, considering all relevant aspects of biodiversity and ecosystem services?
- Is this opportunity compatible with the legal and institutional context?
- Is this opportunity appropriate according to ethical considerations and within the socio-cultural setting?
- Is there a risk of undermining existing conservation measures (e.g. informal community rules regulating resource use, traditional ways of appreciating nature) and if so, have the implications been considered?

The examples in the paragraphs above explain why appropriateness has to be taken seriously and these are crucial questions to consider. Based on your knowledge of the context, your intuition, and taking into account different stakeholder perspectives, your team ultimately has to judge what is or is not appropriate and decide whether a particular opportunity is worth pursuing. Bear in mind that although these processes are designed to get as close as possible to a 'win-win' situation, it is seldom that everyone is happy in all respects. Some level of understanding and compromise is generally required.

Task 4 C. Coming up with ideas for economic instruments

At the end of Task 4C you will have selected a (set of) potentially suitable economic instrument(s) that tap into the opportunities. You will have filled in the fourth column of Template 7.

What this task is about

At this point, suitable economic instruments can be selected. Table 3 gives an overview and explanations of widely-used economic instruments that have been applied in biodiversity conservation and which stimulate local community involvement and benefit. The framework depicted in Figure 2 shows that economic instruments directly build on the principles behind the opportunities as described in Task 4A. Their deployment often combines several of the economic principles, however. For instance, PES schemes combine contributions from beneficiaries (or in some cases from degraders) with an incentive mechanism for providers of ecosystem services, and there is usually a fund to channel and redistribute the money. Developing and promoting an ecological product often requires start-up financing in this way.

It is important to keep in mind that new economic instruments are typically most effective in combination with existing ones and also with non-economic measures. Most of the time, there are also several sustainability challenges within the same area, and a mixture of instruments is more likely to address them successfully than a single one. For instance, a voluntary scheme by which beneficiaries support ecological land management or conservation actions can improve on the minimum requirements already established by direct regulation (such as rules for land use within protected areas, limits to fertiliser use, legal restrictions on hunting or logging, etc.). It may provide additional bonuses for conservation activities in buffer zones or other conservation areas. Keep in mind that existing policies and instruments that assist conservation do not necessarily originate from environmental policies, but might stem from different sectorial policies, e.g. agriculture and forestry, energy, transport or trade policy.

Building on existing schemes can be effective, but does not always work!

In Thadee, there seemed to be an opportunity to connect the scheme to an existing agreement between NST municipal authority and Thadee sub-district (the upper watershed), by which the municipality granted free waste disposal (worth 200.000 Baht annually) in return for restoration measures. This was abandoned, however, since this scheme did not work effectively: the right to free waste disposal had become taken for granted while the restoration measures remained unclear and unmonitored. Moreover, local authorities did not respond well to the idea of improving the situation by defining clear actions, time lines, etc.

Education and information: Learning about and connecting with nature, or raising awareness about biodiversity and ecosystem service degradation, often encourage the acceptance of new policies, or increase participation in voluntary conservation and management measures. In the long run, true intrinsic appreciation of and connection with nature may be even more important to the success of conservation measures than economic incentives.

How to go about Task 4 C

Start out by looking at the overview of economic instruments in Table 3. The reference to the underlying principles helps you link instruments to the opportunities that you identified in Task 4A and checked for appropriateness in Task 4B. In addition, the table includes information on the suitability of different instruments for local management and policy. The Appendix D provides further examples from case studies where these instruments have been applied. The case studies should inspire and help your team to derive concrete ideas about what could work for you. Bear in mind, however, that devising appropriate economic instruments often requires considerable innovation, because of the unique features of each setting and case. Experiences in other areas are useful to know about but not often directly transferable. All of this should help you judge which economic instrument could work in your context and for your purposes, but a good understanding of economic concepts and instruments is required. It can be very helpful to discuss with someone experienced in implementing economic instruments for conservation.

Compatibility and synergies with existing policy measures must also be considered. Taking stock of existing policies was one aspect of the context analysis in Step 2. It is useful to reconsider the context document in Step 2 and see if it points to shortcomings, trade-offs and blind spots that have been overlooked in the design of current instruments.

Write your ideas for suitable economic instruments in the last column of Template 7. It can help at this point to keep several options in mind. These will be analysed in the next steps in order to clarify if and how they might work in practice before you decide on the best approach.

Selected references and further guidance for Step 4

Guidance on the selection of economic instruments:

The Guide on 'The Polluter Pays Principle' (Cordato 2010) provides an overview on how to use the principle in environmental policies (Task 4A).

The publication 'Incentive and Market-Based Mechanisms to Promote Sustainable Land Management' (CATIE 2012) presents an analytical framework and tool for how to use incentive and market-based mechanisms (IMBMs) to promote investments in sustainable land management practices (SLMPs) (Task 4C).

The report on 'Economic Instruments in Biodiversity-Related Multilateral Environmental Agreements' (UNEP 2004) provides an overview of economic instruments and explains their potential role for meeting policy goals in the context of the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and the Ramsar Convention (Task 4C).

Chapter 2 of the Millennium Ecosystem Assessment report 'Ecosystems and human well-being, Policy Responses, Findings of the Response' (Chambers & Toth 2005) presents a basic overview of the wide range of policy instruments and measures (including economic ones) to regulate human interaction with ecosystems (Task 4C).

UNEP (2009) has developed a Training Resource Manual on 'The Use of Economic Instruments for Environmental and Natural Resource Management' that provides detailed descriptions for understanding and selecting economic instruments, and can be used for training purposes (Task 4C).

Chapter 4 of the Conservation Finance Guide (CFA 2008) presents a description of various conservation finance mechanisms (Task 4C).

Table 3: Overview of economic instruments according to the four principles

Economic instrument	Steward Earns	Beneficiary Pays	Polluter Pays	Innovation	How it works	Suitability for local community involvement and benefit
User fees & surcharges	☑	☑	☑	☑	Imposes fees or charges for the use or consumption of goods, services or activities associated with the natural environment. These may be used to generate revenue, recover costs and/or manage demand. If the aim is to generate income, all or some of the fees are retained and reinvested in conservation (or channelled to fund the people who manage the land, resources or facilities for which charges are being made). Common examples of user fees include: • Protected area entry fees • Parking, waste disposal and sanitation fees • Timber royalties • Fishing, hunting and trophy fees • Other resource-harvesting fees (firewood, medicinal herbs, wild plants, etc.) • Bioprospecting fees • Charges for the use of tourist facilities (climbing, hiking, camping, etc.) • Restaurant, hotel and land concessions and rental fees.	Although local communities can in principle impose, collect and retain user fees, additional legal and administrative conditions are usually required. It is particularly important to know that: • Clear ownership or other management rights are usually required before user fees can be imposed • While procedures for setting and collecting user fees can be determined via bye-laws or other local instruments, legal frameworks are often enshrined in national law • Where a group of people (rather than an individual) is involved in collecting fees and using revenues, an agreed mechanism needs to be in place for collecting, holding and allocating the resulting income.
Payments for Ecosystem Services (PES)	☑	☑			Landholders or resource managers are rewarded or compensated for managing land and resources in a way that generates specified ecosystem services. Payments are made by the beneficiaries of ecosystem services, and may be provided in cash or in kind (e.g. via monetary payments, contributions of infrastructure, technical training, access to loans, etc.). PES are most frequently made to regulating services such as water quality and supply, landscape enhancement, biodiversity conservation and disaster risk reduction.	PES can provide an effective way of channelling income to the community and generating conservation incentives for local land and resource users. However, many conditions are required for successful, effective and equitable PES schemes, including: • Clear and enforceable property rights • Negotiated, binding agreements • Monitoring of compliance and delivery • Transparent mechanisms for collecting, administering and distributing funds.
Carbon payments	☑	☑	☑		A special form of PES which involves the sale of certified emissions reductions (carbon credits), generated by undertaking land and resource uses which sequester carbon, or which avoid or reduce carbon emissions.	In principle, carbon payments can easily be paid at local community level. Reducing Emissions from Deforestation and Forest Degradation (REDD+) and other voluntary forest carbon sales often explicitly build in community and biodiversity objectives. Developing verified schemes and selling the resulting offsets is technically and administratively complex. It is often difficult for communities to access carbon markets without outside technical and financial assistance.
Direct payment (e.g. conservation concessions & contracts, compensation etc.)	☑	☑			People are provided with performance-based payments for undertaking agreed conservation actions. These payments can occur within PES schemes, but they are often made by international agencies, governments, companies or NGOs and not necessarily by the beneficiaries of the ecosystem services. They typically focus on compensating the opportunity costs of foregoing a particular land or resource use in order to secure conservation goals.	Direct payments most commonly go to local communities in high biodiversity areas. Some direct payment schemes have proved controversial, when they involve international conservation agencies paying people in developing countries to give up rights of access or use, or cease certain livelihood activities.

Economic instrument	Steward Earns	Beneficiary Pays	Polluter Pays	Innovation	How it works	Suitability for local community involvement and benefit
Insurance schemes	☑	☑			Insurance schemes compensate local people for cost or damages related to conservation (e.g. crops or livestock eaten by wildlife).	Insurance schemes can work well at local level, often in combination with other measures.
Voluntary donations and corporate sponsorship	☑	☑	☑		Individuals or companies interested in conservation, or who benefit from ecosystem services, or accept that they play a role in the degradation of ecosystems, voluntarily sponsor activities that enhance biodiversity or channel funds to local communities.	These arrangements often specifically target communities in high biodiversity areas, or are connected with the provision of a particular ecosystem service (e.g. a village where eco-tourism happens, or near a protected area, or within a territory where mining is carried out).
Taxes		☑	☑		Activities that use ecosystem services or run the risk of harming biodiversity and ecosystem services are subject to 'ecological' tax or to relatively higher tax rates.	Taxes can effectively target small-scale producers or consumers to meet both livelihood and conservation objectives. The key question is whether community or other local authorities have the political power to decide or to influence tax measures.
Tax reliefs, subsidies	☑				The government supports products, technologies, investments and practices that minimise or prevent environmental degradation, or contribute towards conservation goals by relatively lower tax rates, tax exemptions, or payments.	Tax reliefs and subsidies can be granted to small-scale producers and consumers, combining livelihood and conservation objectives. Subsidies or tax reliefs are often decided at national or state level, and may be outside the scope of local projects.
Ecological fiscal transfers	☑	☑			Redistribute public revenue according to certain criteria, including conservation measures. Payments compensate for the costs of conservation measures (including opportunity costs) and reward the provision of public benefits.	By definition, fiscal transfers redistribute revenues within or between public sector agencies. Their main application at local level is to fund local government administration or line agencies, helping lower-tier governments with the cost of providing nature-related public goods and services. They usually target regions which contain an especially large protected area, or which host biodiversity of exceptional significance or provide particularly valuable ecosystem services to other sectors and parts of the country.
Benefit/revenue-sharing	☑	☑			A flat fee or percentage of public revenues or private income streams generated from conservation products and services are shared with local residents. The intention is to recognise that local people play a key role in conserving the environment and enabling the revenue streams that are generated by it, and to provide them with positive incentives and tangible benefits to continue to do so.	Benefit and revenue-sharing arrangements commonly targeted at communities in areas of high biodiversity (e.g. in or around a Protected Area). Sometimes payments are made directly to households or individuals as cash dividends, but more often funding is given to local authorities or village committees to spend on development activities.
Prizes, awards & other recognition	☑				Prizes, awards or other honours are used as a way of recognising and rewarding individuals, groups or villages/towns which display particularly good environmental practices.	Prizes and awards are often given to individuals, businesses or local groups.
Fines, penalties & legal liabilities		☑	☑		People who overuse, harm, or pollute the environment are legally obliged to pay for the damage they cause. The aim is to motivate individuals and companies to avoid or minimise environmental impacts or, if damage is already done, to oblige the responsible party legally and financially to compensate for it.	Effective local enforcement depends on the collaboration of relevant authorities and general compatibility with the law.

Economic instrument	Steward Earns	Beneficiary Pays	Polluter Pays	Innovation	How it works	Suitability for local community involvement and benefit
Tradeable quotas, rights & permits	☑	☑	☑		Sets overall or individual limits on the use, conversion or pollution of the environment. Resource users, land developers or polluters who wish to exceed their quota or right must buy permits from others. The sellers of these permits are those who are not using their own allocation, or who have gained credits from conserving the resource or ecosystem service elsewhere.	Although the users of the quotas, rights and permits are usually larger-scale industries, in principle there is potential for local communities to trade their allocated permits or quota, or to accrue credits through conservation activities.
Auctions & tenders	☑	☑	☑		Auctions are a mechanism to decide which landowners receive a contract that pays them to change land use and carry out landscape conservation measures on their land. So several landowners make competing propositions or bids for the price they ask to implement conservation measures and a buyer (government or private) will decide which one to accept (usually lowest price for comparable measures).	These mechanisms have been applied mainly in developed countries, such as the US, Australia, or Netherlands. An advantage is that local government agencies become clear information about the cost to achieving the desired outcomes.
Biodiversity offsets, habitat/ mitigation banking	☑		☑		Companies whose activities damage biodiversity or destroy natural habitats (e.g. agriculture, forestry, oil and gas, mining, transport or construction) invest in biodiversity conservation elsewhere in order to balance or compensate for damage. Biodiversity offsets are usually pursued as a final step after on-site environmental harm has been reduced and alleviated as much as possible. When a conservation bank (or 'mitigation banking') is established, a landowner who acts to conserve the natural habitat is seen as making a deposit in the bank and receives credits. Another landowner who wants to develop the habitat or otherwise impact on it must purchase a credit from the bank.	Local suitability depends on responsible authorities, but schemes are often determined by national law. There are often high transaction costs in setting up, monitoring and managing the schemes.
Debt-for-nature swaps	☑	☑	☑		A portion of debt is forgiven in exchange for environmental conservation measures.	These have been used at international level when a developed country writes off a developing nation's foreign debt. At local level, the challenge is to convince banks as debt holders to participate.
Deposits & performance bonds			☑		Individuals or companies undertaking activities which threaten the environment or require some form of mitigation, remediation or management plan are required to make a (usually refundable) deposit of funds against the expenditure involved.	Although these have limited application to most community-level activities, they serve to safeguard local environmental quality.
Green products & markets (alternative income & employment sources)	☑			☑	Income streams are developed from products based on the sustainable use of land and natural resources, which use environmentally-friendly production processes, or which replace environmentally-damaging sources of income and employment. This may involve reforming existing products and markets or establishing new ones.	Widely used as incentives and sustainable income sources for communities in areas of high biodiversity. It is worth noting that external assistance is often required to assist communities in identifying and accessing new products and markets, sourcing credit and investment capital, and developing commercially viable business plans.

Economic instrument	Steward Earns	Beneficiary Pays	Polluter Pays	Innovation	How it works	Suitability for local community involvement and benefit
					Common examples include: • Wild nature-based products (e.g. honey, fruits, natural cosmetics, handicrafts) • Domestication of wild species (e.g. flowers, medicinal plants, commercial species) • Eco-tourism.	
Certification & eco-labelling	☑			☑	Eco-labelling and certification are voluntary trademarks awarded to products or services deemed to be environmentally sustainable. The idea is to enable them to charge a price premium and reach new markets – thus providing an incentive for businesses to operate in a way compatible with biodiversity conservation. Common examples include: • Fisheries • Timber • Eco-tourism • Organic agriculture.	Although in principle eco-labelling and certification schemes enable local communities to reach new markets and profits, the high transactions costs of complying with particular standards or creating a 'brand' can be prohibitive. Certification based on local production can be an option for smaller-scale local initiatives.
Credit & loans	☑			☑	Credit and loans or preferential terms and conditions are explicitly granted to green products and enterprises, or may stipulate certain environmental requirements in their terms of agreement.	Small-scale loans and microcredit, in particular, have particular application for local communities. They can provide an important mechanism for accessing investment funds and an alternative to high-interest local lending institutions. They are useful to marginal groups who lack the collateral or other conditions required for conventional loans.
Green investment facilities (conservation bonds, green investment funds, etc.)	☑			☑	These are larger-scale sources of credit and investment for green or biodiversity-based enterprises. While most of these facilities operate on a commercial basis, some provide funding on preferential or concessional terms. Bonds for instance are tradable capital market instruments issued by sovereign governments, states, municipalities or corporate entities to raise upfront funds, backed up by the promise to repay the investor the value of the bond plus periodic interest payments.	In principle these can serve to fund local community enterprises or sustainable farming. In practice, the minimum amount of capital or credit offered may be too large for small-scale or microenterprises. They are often used to fund joint ventures or partnerships between larger (international) companies and local communities, or to promote externally-run businesses which operate fair trade or other ethical practices, or which explicitly aim to involve and benefit local communities.
Land/resource management & usage rights	☑	☑		☑	The allocation of clear, secure and enforceable use and/or management rights is often a prerequisite for the implementation of economic instruments.	These rights are a vital precondition of local communities becoming engaged in conservation activities or enterprises, in order to safeguard their interests and ensure that they engage on a fair and equitable basis.
Environmental training & education programmes	☑	☑	☑	☑	Training and education is often a prerequisite for the implementation of economic instruments. For example, may enable entrepreneurs and producers to take up new practices or technologies, trigger behavioural change, or increase consumers' awareness of the range of options open to them and the positive benefits of green products and practices.	These almost always complement and reinforce economic instruments. They are often required in order to enable and empower producers, consumers and investors to take up new activities, opportunities and practices.

Sources: CATIE (2012), UNEP (2004), UNEP (2009), CFA (2008)

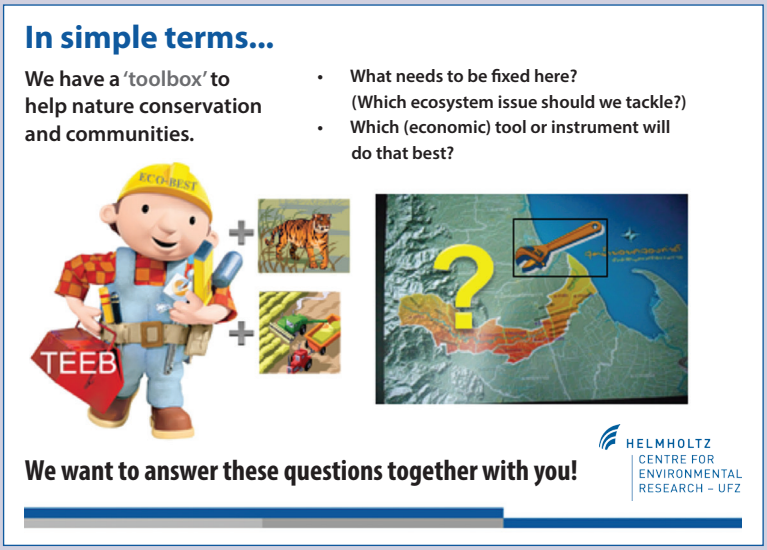
Template 7: Identifying ecosystem service opportunities and suitable economic instruments (examples from Pang-Ma-O)

What change is necessary in order to improve the situation?	Which ecosystem service opportunities arise?	Is the ES opportunity appropriate to pursue?	Which economic instruments could be suitable? (describe all possible options at this point)
→	**Task 4A**	**Task 4B**	**Task 4C**
Desirable change: *Maintenance or increase of agro-forestry and forest ecosystem management*	***Steward Earns:*** ***who could be rewarded, why, and how?*** • *Payments to agro-forestry farmers for ecosystem maintenance and/or tree-planting*	***Apparently YES,*** *but make sure that design does not undermine current conservation motives/action*	***Debt-for-Nature swap*** *where a bank makes an agreement with debtors to relieve debts if they commit to conservation measures (community forest management, turtle protection, agro-forestry)* • *CSR activity for the bank?* • *as business model?* *(perhaps debt could be sold off to beneficiaries)* ***PES scheme*** *for hydrological services connecting down-stream beneficiaries with upstream agro-forestry farmers.* ***Eco-labelling*** *of agro-forestry products (green tea, coffee) and access to new markets could create additional benefits.* ***Eco-tourism:*** *activities for studying turtles, medicinal plants, agro-forestry management* ***Conservation rewards*** *for turtle protection or protection of medicinal plants (e.g. by government, business, or NGOs)*
	Beneficiary Pays: ***who could contribute, and how?*** • *Downstream beneficiaries of climate and hydrological regulation could contribute to ecosystem protection* • *National conservation programmes interested in local biodiversity*	***YES***	
	Polluter Pays: ***who should be held liable and how?*** • *Farmers and businessmen who build houses could be asked to compensate.*	***NO:*** *on private land farmers currently have free choice of land use, and businessmen may buy land and construct houses*	
	Innovation: ***new ways to benefit people*** • *Additional income to agro-forestry farmers through product certification and access to new markets* • *Nature-based tourism* • *Educational programmes for studying turtles and medicinal plants*	***YES***	

Communication challenges and tips for Stage 2

Communicate the project's aims and visions using terminology that people understand!

Communication of the project's goals is essential. In the first year of ECO-BEST even the workshop moderators found it hard to understand the goals of the project and the concepts behind it. In particular, the more technical terms such as economic instruments, ecosystem services, TEEB, policy mechanisms, etc., will not be familiar to many stakeholders, and may lead to misunderstanding or misinterpretation. It will help to find easy terminology and give examples and explanations. In ECO-BEST, we developed the following slide to communicate the general idea behind the approach and we used case study examples to illustrate what economic instruments are and how they can help achieve conservation and livelihood goals.



Use visual aids!

Visual aids are very important to inspire people, help them picture changes in the landscape and believe in innovative solutions. In Bu Phram, a constructed picture of the area after ecological restoration showing wildlife tourists made the vision more real.

Vision of the Bu Pram landscape in 2023

Videos from camera traps were very successful in convincing people that wildlife and land are interrelated. Community leaders were invited to visit a wildlife tourism site where international consultants presented success stories of wildlife tourism in other countries. In Thadee, a map of the entire river basin and hydrological models for possible future scenarios helped people understand the bigger picture (many only knew their local area). Success stories from other countries and visits to a Laos PES site made key stakeholders want to establish such a scheme, although it was also felt that 'Thailand is very different'.

Communicate why you have chosen the site!

You need a good message that conveys why you have chosen this site. In Bu Phram, it was the wide interest (e.g. from UNESCO) in improving the ecological corridor. In Thadee, the fact that the province was known for its strong political engagement, good education, and stable social identity as a 2000 year-old kingdom made it apt for trying out innovative solutions.

Communicate the participative approach!

In Thailand, local authorities and stakeholders are accustomed to regulations and authorities telling them what to do, and to development or conservation projects that offer money in return for specific actions. This 'top-down' culture posed a challenge to communicating our participatory approach and the team had to repeat over and over that this project seeks to enable a process by which stakeholders eventually set up a new mechanism themselves and make it work on a sustainable basis.

Build trust and positive thinking!

In Bu Phram, a major challenge to reaching buy-in for innovative stakeholder-driven solutions was the need to change the general attitude from fear of the National Park taking back the land to a positive vision based on collaboration and trust between park authorities and communities. In particular, farmers with land close to the forest were afraid that if vegetation grew back they would lose their usage rights. On the other hand, National Park Department officials traditionally relied on law enforcement and expected that changes had to come from higher level. Sometimes it was difficult to convince national park staff to participate in meetings where they would feel uncomfortable.

Avoid false expectations!

Expectation management is the key to a positive lasting relationship of trust and buy-in from stakeholders. It is of course important to raise interest by highlighting the potential benefits for people from the implementation of economic instruments. On the other hand, false promises should not be made or high hopes generated before properly assessing what is both useful and feasible. This would risk disappointing people and undermining trust, and might have negative consequences for future collaboration. In Bu Phram local communities initially got the wrong idea that the project would help them to obtain clear land titles. It took a lot of explaining by an lawyer who had recently moved to the village before people understood that the project could not solve the title issue but would nevertheless be useful to them.

Take a broad perspective on 'why nature is important'.

Don't try to force people to think in terms of academic concepts. Local people will have a profound knowledge of the role of nature, including its benefits to their well-being and livelihoods, but they are unlikely to be familiar with the concept of 'ecosystem services'. It is a good idea to start with the broad question of why local nature and ecosystems are important and to whom, and then to narrow down and prioritise the aspects that seem particularly relevant, using culturally meaningful terms. In Thadee, the TEEB icons for ecosystem services sidetracked and confused people, since some of the symbols meant nothing to them or suggested completely different things from what the designer intended.