

Step 5: Sketching out the instrument

The team now specifies the structure and main components of the selected economic instrument(s). This involves determining the key actors, their roles and motivations, and clarifying the broader requirements and supporting conditions and analyses. The expected outputs are:

- *The roles of key actors in the economic instrument are defined along with the conditions and constraints of their participation; and possible impacts on their livelihoods, environment and social situation are screened.*
- *Economic feasibility and cost and benefit sharing needs are assessed, and legal, institutional and other supporting conditions for the implementation of the economic instrument are understood.*
- *If required, additional information is provided or studies are made or commissioned.*
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You now need to look in more detail at the list of suitable instruments from the analysis in **Task 4C**. There is no fixed recipe for how and when to conduct a prioritisation. You can start working either on the instrument that seems most promising or on a sensible combination of two or more. Or, if several options look promising, you can analyse two or more in parallel and then decide which one works best. In other words, for different components of instruments **Tasks 5A–C** can be performed either together (for instance, a multi-faceted PES scheme or different activities under the umbrella of a local co-development plan) or separately. By the end of **Step 5** you must be clear about which instrument(s) or combined arrangement you want to pursue and in which order.



It makes sense to pursue different instruments separately or as a package!

In Pang-Ma-O, the idea of a debt-for-nature swap was pursued with the Bank of Agriculture and Co-operatives (BAAC), to which villagers were in debt. Later, as a separate endeavour, the project started to assess whether certification of agro-forestry and developing new markets for organic tea and coffee might create additional income for villagers, and how ecosystem services beneficiaries (e.g. downstream agriculture, tap water authority, tourism industry and wealthy owners of newly-built residential houses) could support community forest management.

In Bu Phram, an umbrella agreement on a co-management scheme between NP authorities and local communities was a priority, to provide a legal and institutional basis. More specific measures are already sketched out in the agreement, such as payments for letting palm trees grow on agricultural land and for developing eco-tourism, as well as cost and benefit sharing agreements.

Task 5 A. Specifying key actors and their roles, motivations, and constraints

At the end of Task 5A you will have specified the key actors in the economic instrument, clarified what will motivate them to participate, and screened possible impacts or unintended consequences of the instrument for them. You will have filled out Template 5A.

What this task is about

You will now need to specify in detail how the instrument will work in practice. First, identify the **key actors** that need to be part of the arrangement and clarify each one's **role in the new arrangement** brought about by the economic instrument. Important actors may be the providers, beneficiaries or degraders identified in [Step 4](#), but also intermediaries, supporting institutions, political figures, etc. You could seek support from intermediaries between providers and beneficiaries, financial organisations, well-known local personalities, international organisations helping build local resources, among others. In addition to engaging active supporters, it may be just as important to procure the passive consent or acceptance of those who initially oppose the initiative.

You should understand the **motives of relevant actors** in order to ensure that they agree to participate. For instance, some may need additional information to convince them of how the provision of ecosystem services benefits them, or of the income opportunities or other benefits of the economic instrument. In some instances farmers are not sufficiently aware that they could improve the productivity of their own land, for instance by using crop rotation or fewer pesticides. Communicating the benefits of more sustainable practices can help them realise they already have an incentive to change. Identifying and setting in place the appropriate conditions and incentives for actors to participate is a central challenge of the instrument design. Security of access rights for farmers, public recognition of a company's contributions or improved relationships between stakeholders can be important non-financial motives, as well as traditions, beliefs, social norms, or a sense of justice.

ES providers: Incentives for ES providers will usually include some form of support or reward for (additional) provision in line with the Steward Earns principle. The main challenge will be to determine what type of reward would lead to the desired effect (i.e. biodiversity conservation and greater provision of ecosystem services). If monetary, the amount might be based on the direct costs of a more conservation-friendly management or on opportunity costs. However, it is often difficult to verify such costs and full compensation is not always feasible or necessary. More importantly, you need to analyse the conditions under which ES providers would agree to adopt conservation instruments. This does not stop at comparing the income and expenditure of different land management options. While the prospect of money often increases willingness – as well as actual ability – to adopt a particular practice or technology, there is a wide variety of additional factors: for example, the timing, stability and certainty of earnings; the risk involved; the technical expertise and the production inputs required; the alternative earnings and opportunities that are diminished or foregone; the type of product or output that is generated; and the actors' own values, tastes and aspirations. Ultimately, determining the appropriate rewards will be a matter for discussion and negotiation.

**Consider the different motivations of land holders!**

In Thadee, many farmers interested in participating and implementing ecological restoration measures on their land were not all that bothered about financial compensation. To a large extent they had a strong and long-lasting connection to their land and intrinsic spiritual motives (e.g. to give back to nature). Their main aim was to achieve a long-term vision, recognition for their ecological actions and some technical or in-kind support (e.g. seedlings for native trees).

In contrast, farmers in Bu Phram felt little intrinsic motivation for ecological landscape development since most of them had only been in the area for 30–40 years. Their main need was to feel secure about living in the area and working the land, and to have stable income opportunities.

Land users often have an **intrinsic motivation** to protect nature and natural resources. This reflects their environmental values and connection with nature, or relates to existing (informal) community norms governing the sustainable use of natural resources. Depending on the context and the design of policy instruments, economic framing and monetary incentives run the risk of eroding intrinsic motivation (for instance, if financial motives become overriding, or if external regulations supplant informal community rules). In other cases intrinsic motivation can be enhanced, for instance when economic incentives show that conservation in the area is appreciated by outsiders. In selecting and designing effective economic instruments it is therefore essential to understand existing motives for safeguarding nature and ecosystem services, and to carefully assess how economic instruments are likely to affect them.



ES beneficiaries: One of the biggest challenges is to motivate ES beneficiaries to contribute to ecosystem service provision. Credible information on the benefits of ecosystem services and the importance of maintaining them is crucial if they are to pay for what has so far been free. On top of that, additional motivation and arguments may be necessary. If the beneficiary is a company, it may be interested in sustainable access to resources and ecosystem services, in a positive public image, in a good relationship with the local population, or even in contributing to the common good within and beyond its activities. Once beneficiaries show a general interest and openness to dialogue and learning, there is a good chance of achieving voluntary contributions. In other cases, regulatory action can force beneficiaries to contribute fairly to the provision of the services they use. For instruments such as user charges or consumption-based taxes, government authorities usually fix and enforce the contribution. As in the case of rewards, the appropriate amount to pay is another issue. Again, while calculating the received benefits may provide a useful benchmark, much depends on the negotiation processes. It can help – at least to begin with – to suggest non-financial contributions (e.g. in-kind donations, manpower, training, legal advice) in order to achieve general buy-in from beneficiaries.

**Be creative and flexible when engaging beneficiaries!**

In Thadee, ECO-BEST found it very challenging to get ecosystem service beneficiaries to contribute. The NST Municipal Tap Water Unit did not agree to compulsory 'ecological fees' for fear of political repercussions. As a compromise, a voluntary fee was included in all tap water bills. The project helped prepare television and radio spots to raise awareness among water users. The newly established association supports the municipality with the collection of voluntary ecological fees from the local enterprises that confirmed willingness to pay.

In Bu Phram, several ideas for making small contributions were thought of and seen as first steps which could be developed later. In recognition of contributors, stickers were given to passing car drivers and companies in the area. Lan palm handicraft association agreed to buy only from farmers who let native trees grow on their land and pay 3 Baht more per leaf. The owner of the hotel and shopping complex sponsored an exhibition of Lan products and production processes, provided national park information in his facilities, and agreed to grow native trees on part of his land. Hotels, restaurants, tourism companies and the chamber of commerce provided a gateway to identifying further beneficiaries

ES degraders: It is similarly challenging to motivate ES degraders to voluntarily help limit pollution or compensate for damage. Revealing how harm to biodiversity and ecosystem services affects the well-being of other stakeholders can be a powerful message when degraders are not fully aware of the effects of their actions. Engaging in dialogue, relationship-building, new public/private partnerships and negotiating voluntary agreements are always helpful. However, experience has shown that regulatory tools are often needed to limit degradation, hence the application of taxes, liability and offsetting requirements, fines, or restricted permits. It is even more difficult for local initiatives to deal with ES degraders when regulatory action and its enforcement is decided at a higher level (e.g. if it is a matter of national law).

**Avoid greenwashing!**

In Bu Phram, a key actor was the owner of a newly constructed shopping, hotel and recreation complex across the road from Thap Lan National Park headquarters. He was simultaneously a provider (indirectly, as chairman of the park advisory committee and sponsor of conservation and community events), beneficiary (mainly from the scenery around his tourism complex), and degrader (converting large areas of land for building and cattle breeding and contaminating the creek). While he professed interest in the project and agreed to support it, his way of doing so (by staging exhibitions in his complex and through networking) could also be seen as self-promotion through green marketing. The strategy of the project was to engage him more and achieve greater commitment step by step.

Sustainable or green business opportunities can often be based on creating greater demand for products or activities already familiar to local people. Communities or individuals, as potential entrepreneurs, will need to be made aware of opportunities to upscale. They will often require external guidance and expertise in setting up and running a business, identifying new markets, joining certification schemes, and – in particular – finding start-up financing. In these cases, banks or micro-

credit providers need to be involved who would provide financing, or NGOs who manage certification schemes.

In addition to the actors' motives, it is important to understand **current constraints** that might hinder their participation or even create opposition. For instance, fear of political risk can be an important demotivating factor; an unclear land title situation can affect commitment. These constraints need to be addressed if the instrument is to have a chance of success.

Last but not least, you should try to assess **possible social, environmental and livelihood impacts of the economic instrument on different groups**. While a more detailed analysis of these impacts will be carried out later (alongside the feasibility assessment in [Task 6B](#)), it is important at this stage to get a broad idea of the effect of the economic instrument on different people. Your screening should cover direct and intended impacts (e.g. in the PES scheme, who will have to modify their land use and forest harvesting practices?) as well as possible secondary and/or unintended consequences. You need to consider the consequences for the primary actors (e.g. the impact on women's income of reducing agricultural space, the effect of changes in farm production on household food supplies, and whether these changes will result in pressure on other ecologically sensitive areas), and also for other groups in the community. Will farm labourers lose their jobs? How will ethnic minorities be affected by losing their access to the forest? Will the new technologies and enterprises generate waste and/or pollution? This kind of impact screening can help you to flag any important issues (inequities, potential points of conflict, or additional co-benefits) that need to be addressed in the design of the instrument. It should also assist in identifying needs for additional measures to mitigate negative impacts and/or opportunities to maximise positive ones.

How to go about Task 5 A

Once you have specified the main actors, we recommend discussing with them their reasons and motivations. What is currently preventing them from performing the desired activities? What might motivate them to do so? It is important that this motivation is not necessarily (or at least not only) financial. Looking back at the second column of template 7 ([Task 4A](#)) can help identify which actions or activities are required of the actor in order to make the new economic instrument a success.

- Will the actor make payments or other contributions?
- Will the actor be a recipient of rewards in return for (additional) conservation activity?
- Will the actor be an intermediary or supporter in the economic instrument?
- Which other relevant role does he or she have in the new arrangement?
- What are the intended (and possible unintended) impacts of the new arrangement on the actor?
- Might special measures need to be in place to mitigate any negative impacts and/or maximise positive ones?

Template 8 can then be used to summarise the role of key actors in the economic instrument and to understand the challenges of achieving their buy-in. It is important that this table does not only include the primary or direct participants. It should also include other affected parties who do not have a direct implementation role, but whose livelihoods may be impacted. It is also important to identify what you do not yet know and decide if you need additional information on the motives of relevant actors (the final column of Template 8). If so, carry out additional supportive studies or analyses within [Task 5C](#).

Academic work on economic instruments frequently refers to 'buyers' and 'sellers' in ecosystem service 'markets'. In practice it is very rare that ecosystem services are actually sold and bought or even traded as market commodities, and such wording may confuse people or even cause them to reject the idea. Terms such as 'beneficiaries' who 'support' the 'providers' of ecosystem services can be more useful and also communicate much better the fact that support or contributions from beneficiaries may not necessarily be in the form of money; i.e. that providers can be motivated by other factors such as recognition or technical support.



Template 5A: Specifying key actors, their roles, motivations and constraints (Examples from San Martin, Peru)

Key Actors: Which type of actor plays what kind of role in the instrument?	Credit Provider	Technical assistance to farmers	Product specific coordination	Producers
What specific actions or behaviour would be required from the actor?	provision and handling of financial of the credit line
Which institution, person, etc. could potentially take this role? Who is the contact person?	Agrobanco Persona de contacto: Ayme Chamorro			
Is the actor already interested in taking this role? What are (or could potentially be) motives for participation?	Interés: participación confirmada sujeto a viabilidad global del esquema de crédito. Motivos para participar: a. Meta de convertirse en el 2019 en "banco verde", con el 20% de su portafolio en "creditos verdes"; b. requieren abarcar con crédito a un mayor número de pequeños productores rurales y mejorar su cartera de crédito; c. necesidad de incrementar sus colocaciones, pues su rol como promotor de crédito agrario está siendo cuestionado por su baja participación en el mercado financiero.			
Are there currently any constraints that hinder effective participation? How could the constraints be overcome?	Restricciones: a. Actual falta de capacidad y experiencia en el diseño y promoción de "crédito sostenible" o crédito verde; b. sus altos costos de transacción impiden flexibilizar las condiciones del crédito a los productores, especialmente en relación a la tasa de interés. (Pese a esto, Agrobanco tienen la tasa de interés más baja en comparación a otros intermediarios financieros); c. alta percepción de riesgos de mercado, crediticio y del clima, especialmente para café y cacao; c.aún no han definido el producto de crédito para palma aceitera sostenible (rehabilitación, recuperación); d. procesos de aprobación de solicitudes de crédito lentos y costosos para los pequeños productores; e. bajo nivel de involucramiento directo en la promoción de sus líneas de crédito para producción sostenible; f. insuficiente garantía por parte los prestatarios; g. la rentabilidad de los proyectos que son presentados para su evaluación; h. no brindan asistencia técnica directa. Medidas: a. asesoramiento para un nuevo modelo de negocios que priorice a los pequeños productores con una mayor flexibilización en las condiciones el crédito, con enfoque hacia la sostenibilidad y con apoyo a la adaptación al CC. Actualmente Agrobanco recibe apoyo de la cooperación francesa (AFD) para el diseño de productos financieros verdes; UFF ha remitido al equipo de AFD información generada para el piloto con palma aceitera (plan piloto, matriz de costos, hoja de productos y código de conducta).			

Template 5A: Specifying key actors, their roles, motivations and constraints (Examples from San Martin, Peru)

Are there any risks or unintended side-effects of involving this actor? How could these risks be mitigated?	Riesgos: a. Agrobanco tiene una mala reputación con los agricultores en San Martín, debido a las relaciones de crédito pasado), b. actualmente esta pasando por un crisis financiera por falta de liquidez, especialmente por la crisis del café, c. necesita recuperar los créditos otorgados, de manera que sus tasas de interés es muy difícil que bajen menos del 18%, como lo acordado con CEDISA para café, cacao y palma aceitera; d. mayor interés de Agrobanco es acceder a mayor número de productores, especialmente a productores nuevos que reúnen condiciones para ser evaluados y que no trabajan actualmente con el banco; e. énfasis en acceder a nuevos productores antes que definir un producto de crédito acorde a las necesidades de los productores y con características de crédito verde que incorpore estímulos básicos como menor tasa de interés, etc. Medidas mitigación: a. Priorizar el otorgamiento de créditos a productores y asociaciones que sí están dispuestos a solicitar créditos con mejoras básicas en las características básicas; b. mejorar la efectividad de los procesos de atención, evaluación y aprobación de créditos, reduciendo el tiempo de este proceso.			
What does the actor need in order to take this role? - information on... - support with..., etc.	a. Definir con claridad su política de créditos y su estrategia de cartera de créditos; b. sincerar la real disponibilidad de fondos para créditos verdes o sostenibles, buscando acceder a nuevos fondos (el gobierno ha anunciado para Agrobanco una posible inyección de fondos frescos de 500 millones de dólares); c. Información del potencial de demanda de créditos para cultivos sostenibles en las regiones del país; d. Información de los productores con posibilidades de ser sujetos de crédito, situación de las cooperativas y asociaciones para intermediar los créditos a los productores; e. fortalecer los conocimientos y capacidades de los analistas de crédito de respecto a las líneas de crédito para producción sostenible y para la evaluación y aprobación de las solicitudes de crédito de los pequeños productores; f. Mejorar la comunicación entre los funcionarios de Agrobanco-Lima y Agrobanco-provincias y de estos con los gestores de créditos, proveedores de asistencia técnica y articuladores en la cadena.			
For involving this actor, what do you not know yet and need to study further?	a. Conocer la nueva política y estrategia de Agrobanco para facilitar el acceso al crédito de pequeños productores; b. los cultivos y zonas que serán priorizados (actualmente Agrobanco ha paralizado la entrega de créditos para café y ha restringido para cacao); c. tener claridad del concepto de crédito verde y la orientación de estos (para Agrobanco basta que un cultivo se encuentre bajo la modalidad de sistema agroforestal para que sea considerado "verde", con o sin código de conducta, etc.); d. mayor información de la política de alianzas en las que Agrobanco participa como proveedor de crédito (cacao, café) en San Martín: con Alianza Cacao para cacao y con TechnoServer para café en la zona del Alto Mayo, principalmente; e. posibilidades de coordinar con el equipo de AFD la participación de UFF en el diseño del producto de crédito verde para palma aceitera, incluyendo la participación de los productores y de JARPAL y ACEPAT; f. posibilidad de implementar seguros y garantías para los productores.			

Task 5 B. Clarifying necessary and supporting conditions

At the end of Task 5A you will have specified the key actors in the economic instrument, clarified what will motivate them to participate, and screened possible impacts or unintended consequences of the instrument for them. You will have filled out Template 5B.

What this task is about

If the economic instrument is to work sustainably, it must be economically feasible. You must think about the **financial inflows and costs** involved as well as the **financial risks**. So you first need to clarify which tangible revenues, income or other proceeds the selected instrument should generate and how likely it is to do so. You need to check:

1. All sources of inflow and the expected level of inflow (e.g. through payments from ES beneficiaries, new business opportunities, access to microcredit or subsidies, interest from endowment capital)
2. The variability (i.e. riskiness) of each inflow, by determining i) the factors that influence variability (e.g. market prices, demand for a product, interest rates, weather conditions), ii) the direction and degree to which they do so, and iii) how you expect those factors to develop in the future (e.g. possible price increases, new bank interest rates).

Then you need to determine the costs involved in setting up and running the instrument, including all financial payments to ES providers. When you compare expected inflows and costs, keep in mind that the instrument should not only cover transaction costs but also generate and re-allocate additional (financial) benefits to support ecological and/or social purposes. So you have to identify:

1. All types of costs and the expected amount (e.g. payments to ES providers, costs of running an office or employing people to manage and monitor the instrument, obtaining permits, buying materials)
2. The variability of each cost, by determining i) the factors that drive it (e.g. permits required, paperwork), ii) the degree to which those factors influence the level of cost, and iii) how you expect those factors to develop in the future (e.g. salary increases, costs of materials).

In addition to these calculations, you should also check if there are any other options that could achieve the same results with less effort and expense (i.e. whether the instrument is cost-effective). Determining income streams, transaction costs, or cost-effectiveness may require additional supporting analyses (see [Task 5C](#)).

Cost and benefit sharing

Once you have identified the cost streams and the new and additional benefits you can consider how best to cover the costs and distribute the benefits. It may be desirable – or necessary – to ensure that particular groups or sectors are especially targeted in the allocation (or at least not left out). Failing to deal with issues of different stakeholder costs and benefits may lead to later conflict, or even ultimately undermine the success and sustainability of the instrument. In some cases, the distribution will be straightforward. For example, if the instrument is an agricultural subsidy, it is obviously the farmer who should receive it and the government who will fund it. In other instances the arrangements are not so obvious, and will require negotiation between the various parties involved. This often happens when property rights and ownership are unclear, or the instrument is being implemented by a group or community: e.g. if eco-tourism revenue is to be spent on improving village infrastructure; if a group of land users jointly manage an area for which PES payments are being made; or if a forest made available for

bio-prospecting is owned communally. Finally, there may be political, ethical or distributional reasons for targeting particular groups: e.g. to benefit low earners and safeguard their interests; to recognise the traditional knowledge and intellectual property rights of ethnic minorities; or to ensure that most of the expenses are paid by corporate sector partners and the richer farmers.

Legal and institutional requirements

Successful implementation also depends on legal and institutional requirements. It is often impossible for individuals to engage in PES schemes or enter new markets unless they have a clear, enforceable right to use and benefit from the lands or resources. Farming associations or cooperatives could be indispensable in implementing and monitoring a certification scheme. You need to specify building blocks for the instrument, such as:

- Forming a support committee or working group with representatives of main stakeholder groups
- Engaging or constructing legal entities, e.g. a private company, a cooperative, or an association
- Assigning rights or responsibilities (e.g. land tenure, resource access, co-management)
- Promoting the amendment of rules and regulations (e.g. supporting PES schemes) or ensuring that the instrument is backed by existing rules and legislations.

When there are different options, for instance in the choice of legal entities, then you may need to conduct specific analyses within [Task 5C](#) to decide which ones are most suitable.



Think out of the box to ensure the institutional basis of the instrument

In Bu Phram, there was no legal basis for collaboration and benefit-sharing between NP and communities. With the help of legal advisors, the project identified an article in NP legislation giving park managers a degree of autonomy in decision-making to improve ecosystems and which could be interpreted as allowing joint management. The NP department was hesitant at first but then agreed.

In Thadee, it took a year to select the 51 members of the Klong-Thadee sub-river basin committee from different stakeholder groups. Even then it was difficult to have the committee officially endorsed. The municipal water authority refused, and the provincial representative of the environment ministry regarded it beyond its responsibility. Finally, the provincial representative helped convince the provincial governor authorities to endorse the committee.

Supporting activities

A number of activities can further enhance the success or effectiveness of the instrument, such as:

- Technical training and capacity building
- Facilitating or organising training and awareness-raising activities to communicate the importance of the envisioned changes
- Mobilising trustworthy local personalities to champion or host the project
- Mobilising external investments.

**Raise awareness with community activities!**

In Thadee, an obstacle to establishing watershed restoration measures for flood and drought prevention was that the effects are gradual and not easy to verify or demonstrate. The project therefore supported an initiative by which communities received materials and technical assistance for building biobased check dams along the river. People then saw the immediate effects, felt proud of their achievements, and recognised their ability to collaborate. This helped create mutual trust and involvement in other local initiatives; it fostered better monitoring of and collaboration in flood prevention in the rainy season; and it visibly reduced droughts in nearby farms during summer. A further offshoot was to enable schoolchildren to observe rare and endemic fish species and to appreciate a healthy river ecosystem.



Check dams are relatively small, temporary structures constructed across a swale or channel. They are used to slow the velocity of concentrated water flows, a practice that helps reduce erosion.

Some of the activities mentioned not only help to implement the economic instrument, but are often important in their own right. Training, education, and awareness-raising activities are crucial for stimulating more sustainable action in the longer term. The building of stakeholder committees that aim to improve local environmental conditions or to ensure local sustainability can be the foundation of local development and self-governance.

How to go about Task 5 B

The above structure can help you make a template or overview table to calculate economic feasibility. Determining the inflows and costs, as well as the risks involved, will almost certainly require study and additional analysis (see [Task 5C](#)) and you want to make sure that you have the necessary expertise and experience in financial matters. Are you confident that your basic calculations include all significant costs? Have you considered the financial risks if, for instance, an inflow does not materialise and/or costs end up higher than expected? Could this endanger the overall effectiveness of the instrument?

In determining a cost and benefit sharing scheme, it is crucial to consider what the actors involved regard as fair. But when you assess that in consultation with them, make sure their expectations aren't too high about what benefits they might receive in practice.

A first step towards identifying necessary conditions can be to look again at the relevant actors identified in [Task 5A](#) and the constraints on them. Talking to stakeholders and using the context information gathered in [Step 2](#) may also be helpful. Think through what the suggested instrument means for each actor and what would help them to see it as a practical opportunity to make real improvements. Template 9 helps structure the identification of favourable conditions. The final column asks whether there are open questions that need clarification by means of additional supportive study or analysis. This feeds into [Task 5C](#).



Template 5B: Necessary and supporting conditions (examples from Klong-Thadee river basin, Thailand)

What are the necessary or supporting conditions for successfully implementing the instrument?	Why are these necessary?	How can the conditions be fulfilled?	Which activities are required?	What open questions need to be clarified by a study or analysis?
Self-organising ability of stakeholders to host and manage a river basin-wide PES scheme	There is currently no official coordinating body comprising stakeholders along the river basin that is capable of managing a PES scheme.	Establishment and official registration of a Thadee Sub-river Basin Committee.	<ul style="list-style-type: none"> • Identification of potential members. • Meetings to establish the committee. • Transparent and inclusive election process for committee members. • Agreement on committee mandates and functions. • Official registration (e.g. with Regional Office of the Water Resources Department or the NST Governor Office). • Door to door visits to both offices to explain the objective, structure, and administration of the committee. 	<ul style="list-style-type: none"> • Who needs to be included in the election process? • Which authority can officially nominate and register the committee?
A hosting institution for managing a watershed conservation fund	<ul style="list-style-type: none"> • Under current law no existing organisation or administration body is qualified to collect and pay funds. • It is unclear whether or when the committee could take this role. 	Registration of an association or foundation at local level.	<ul style="list-style-type: none"> • Clarify mandate and functions. • Clarify legal basis for registration. • Clarify registration procedures. • Submit proposal to relevant agencies for registration (NST municipality or provincial governor). 	<ul style="list-style-type: none"> • What are the registration procedures? Which documents are needed? • What legislations can be referred to when the proposal is submitted to NST governor?
Communication to local authorities and population	Awareness of ecosystem services of watershed management is low. Beneficiaries' willingness to contribute of beneficiaries needs to be increased.	Short film, spots on local radio, flyers	<ul style="list-style-type: none"> • Develop communication material (key message, slogans, graphical illustration, etc.). • Subcontract a local, film maker to produce the short-film. • Interviews with supporters of the scheme. • Design flyers with simple information on the Thadee PES Fund and subcontract the local publishing company. • Prepare brief information for local radio stations and request its broadcast. • Involve members of the Committee in radio and TV programmes. 	<ul style="list-style-type: none"> • What are the most effective communication channels in the area? • Who could support marketing (financially or in-kind)?

Template 5B: Necessary and supporting conditions (examples from Klong-Thadee river basin, Thailand)

What are the necessary or supporting conditions for successfully implementing the instrument?	Why are these necessary?	How can the conditions be fulfilled?	Which activities are required?	What open questions need to be clarified by a study or analysis?
Technical training and seedlings for tree planting	Some providers have expressed a need for training and forest tree seedlings as non-financial support.	Organise trainings and provide seedlings within the functions of the PES scheme.	<ul style="list-style-type: none"> Collaborate with supporting farmers who produce forest tree seedlings for charity. Search and negotiate price of seedlings of popular species that are available in the market. Seek collaboration with Royal Forest Department in providing seedlings of non-traded species and for technical expertise. 	<ul style="list-style-type: none"> Which tree species should be promoted and who can provide expertise to farmers? What are the requirements for long-term collaboration with the NST forest office and how to involve them in running the PES scheme?

Task 5 C. Providing supporting analyses

At the end of Task 5C you will have defined which additional supporting analyses are required and you have either started conducting them yourself or commissioned external experts to do so. You will have filled out Template 5C.

What this task is about

At this point, there will probably be a need for further supporting analyses or studies. **Tasks 5A and 5B** should have clarified what is needed. The purpose of **additional information** is likely to be:

- To generate awareness and acceptance among stakeholders – in particular the key actors – of the need for change
- To confirm the feasibility, effectiveness or appropriateness of an economic instrument
- To compare different design aspects of the instrument, e.g. possible institutional set-ups for a fund, ecological certification schemes, or forms of credit for up-start investments.

The Appendix E offers an overview of different types of analysis that can be useful, distinguishing ecological analyses, ecosystem service valuation, market analyses, cost assessments, and legal analysis. It shows that they require very different approaches, methods, and data. Here are some examples of **study questions** that could arise:

- What is the potential for generating local income by developing a specific ecological tourism activity or nature-based product?
- Which transaction costs are needed to set up and run the instruments?
- How much would it be appropriate (and realistic) for ES beneficiaries to contribute to ecosystem provision within a PES scheme?
- How much would it be appropriate to pay providers of ecosystem services for changing to a more ecological or conservation-friendly land use practice (within a PES scheme)?
- What reasonable level of entry fees could be set for a new tourism area?
- How much would it be appropriate for degraders of ecosystem services to pay in compensation?
- What benefits in terms of hydrological ecosystem services can we expect from a proposed reforestation measure?
- Which areas (e.g. within a watershed) are particularly suitable for environmental objectives such as enhancing ecosystem service provision, improving a wildlife corridor, or protecting certain species?
- What kinds of social, environmental and/or livelihood mitigation and management plans may be required as part of the instrument's design?

Before performing or commissioning an analysis or study, it is worth reflecting on the **required level of detail, depth, and scientific rigour**. Remember that you want to start implementation as soon as possible. If studies take too much time, stakeholders might lose interest and then the process will lose momentum and energy. You need to discuss this within the team and with the relevant experts. Academics may favour higher standards of scientific rigour than someone with a more pragmatic approach. You need to find the right balance to ensure credible results which you and others can trust, while taking into account practical constraints. Generally the choice will depend on:

- the extent to which effects are already known and accepted
- the scale of the issue and type of stakeholders to convince
- whether the purpose is to raise awareness of the process or to establish the concrete design of the economic instrument
- the extent to which data is readily available or has to be generated
- the resources available, including time, money and access to experts.



The following aspects are useful to consider when contracting experts for specific analyses or studies:

- Since time and resources are usually scarce, you should be very clear about the purpose of each additional analysis within the overall context of the process before commissioning a study;
- Make sure that the experts understand the 'big picture' and the role of their specific contribution to the applied aims and needs of the project. It can help to organise field trips to the project site and workshops with other contributing experts from different academic fields;
- The team should encourage interdisciplinary understanding or even active cooperation between contributing experts from different academic fields (e.g. ecological modelling and economic valuation) and ensure that the results are compatible;
- Specific Terms of Reference (ToRs) and feedback rounds are helpful: for instance, a detailed public proposal of the study design during which the experts explain the approach and the methods they intend to apply.

How to go about Task 5 C

Study needs will often become apparent after identifying the possible motives of actors for participating in the instrument (Task 5A) and the necessary conditions for implementing it (Task 5B). For this reason, the last column of templates 8 and 9 ask what you do not yet know and need to study further. Before actually starting or commissioning any additional supporting study or analysis, you should be very clear about its purpose. This is important for justifying the time and effort, but it is also necessary for the selection of relevant study methods and to formulate Terms of Reference (ToR) in case you require external support. Filling out Template 5C can help you clarify the purpose of the study and to select suitable approaches.

When the results of the supporting studies and analyses are known, they need to feed into the process according to the purpose that you identified. In Step 6, they will be used to determine the specific architecture and design of the instrument. For instance, results of studies intended to convince key actors to participate must be shared with those actors and feed into consultations and negotiations. Studies to determine financial inflow or cost will help to finalise the economic feasibility study and to adjust the financial aspects of the design proposal. Legal studies will feed into the institutional and legal setup, etc.

If you were still not sure which instrument(s) or package of measures to pursue, you should now be able to make this important decision based on the additional knowledge. A specific design proposal (Step 6) and implementation plan (Step 7) should only be made for the instruments you still consider viable.

Template 5C: Specifying additional supporting analyses – find explanations below (examples from Bu Phram, Thailand)

Type of study or analysis	What is the purpose of the analysis or study?	Which questions need to be addressed by the analysis or study?	Which approach method and data could be used?	Who could do the analysis?
Market analysis	To understand the potential of eco-tourism in Bu Phram.	<ul style="list-style-type: none"> • How willing are people to pay for specific eco-tourism services? • How would payment be made? • What kind of services and facilities would tourists appreciate and pay for? • What types of tourists are interested (nationality income class, age group, etc.)? 	Contingent valuation survey with users of Highway 304 to elicit willingness to pay.	Economist
Ecological zoning	To determine suitability of land for restoration.	<ul style="list-style-type: none"> • Which land plots between Thap Lan and Khao Yai National Park should be categorised as 1st, 2nd and 3rd priority to be restored? 	Focus group discussions among the park, wildlife NGOs, and villager leaders.	Ecologist
Wildlife inventory	To demonstrate that the region is abundant in wildlife and to determine suitable spots for wildlife watching.	<ul style="list-style-type: none"> • What kind of wildlife inhabits the area? • Which spots are most frequently used by wildlife? 	Photo traps, reports on encounters with animals, analysis of tracks	Wildlife experts (NP staff), hunters
Needs analysis with farmers / Willingness to accept compensation	To determine amount of compensation to farmers for restoring land to wildlife-friendly conditions.	<ul style="list-style-type: none"> • How much compensation do farmers need to support the scheme? • What are other conditions or criteria for participating? 	Choice experiment with farmers.	Environmental economist
Willingness to pay (to a fund)	Identify potential contributors and the type and amount of their payments.	<ul style="list-style-type: none"> • Which beneficiaries are willing to contribute to ecological restoration? • What are the conditions or criteria for their contributions? • What form of contribution, how much and for how long? 	Face to face interviews	Project staff

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Ecological analysis can help key actors understand and appreciate the problems associated with the current situation and to accept the need for conservation efforts. It provides evidence of bio-physical relationships between drivers of ecosystem change and (the loss of) biodiversity and ecosystems. For instance, analysis can demonstrate the effects of forest conversion on the occurrence of flood and drought events, on sedimentation rates, or on carbon sequestration. Ecological studies can also be necessary to understand the effectiveness of different management options (e.g. conservation activities or agricultural management schemes) on biodiversity and ecosystem services provision or other relevant environmental indicators (e.g. quality of water, soil or air).

In some cases, it can be useful to conduct an **ecosystem services valuation** to illustrate how changes in ecosystem service provision affect the wellbeing or economic values (damage, benefits, etc.) of relevant stakeholder groups. Such studies typically require interdisciplinary work on ecosystem services, linking bio-physical and socio-economic analyses. Consider for instance the effects of an increase in watershed forest cover from 10% to 20%, of a change from cash crop monoculture to agro-forestry, or of removing an agricultural subsidy, or of a new law allowing no livestock within 100m of a river to reduce bacteria. These analyses must determine the ecological effects of different management options before assessment is possible of the resultant ecosystem service provision and its effects on the wellbeing of different stakeholders. It will be crucial to use appropriate indicators, both for bio-physical and socio-economic analysis and to gain access to the necessary data. Should economic valuation of ecosystem services be applied, then the choice of appropriate valuation technique(s) is crucial for generating credible and useful results. Valuation methods are chosen depending on the problem statement, the type of ecosystem service, and the local cultural context. It is difficult to make general recommendations. The valuation expert will have to be aware of the merits and limits of different methods and select the approach that best suits the situation and purpose at hand.

Another type of study is **market analysis**. Before introducing an innovative ecological product, a market analysis of its sales potential and distribution channels for ecological products may be required. Or you may want to determine the potential of a product certification scheme (eco-label) and consumer demand for a certified product, or identify options for joining existing certification schemes.

Cost assessments are an additional type of useful analysis. Sometimes **direct costs** have to be estimated to work out the financing of proposed activities (e.g. reforestation, wetland restoration, change to organic agriculture, wildlife monitoring), or to weigh the cost-effectiveness of different options. Determining **opportunity costs** is frequently useful when the economic instrument (e.g. a PES scheme) involves motivating providers of ES to forego more profitable activities (e.g. monoculture land use, pesticide use, exploitation of forest resources, or over-fishing). Knowing opportunity costs can help understand the barriers to participation in the economic instrument and how to motivate ES providers to participate. In some cases, this motivation may be financial, in which case the opportunity costs can help to decide how much should be paid.

Legal analyses can be important, especially when the legal situation regarding land use or property rights is unclear, or when you have to decide which legal entity (such as associations, cooperatives, or a limited liability corporation) is most suitable to be part of the proposed institutional arrangement.

Finally, other types of studies, such as an analysis of the workings of specific institutions (e.g. water or agricultural authorities), or the assessment of community norms that currently govern resource use, can also play an important role.

Selected references and further guidance for Step 5

Guidance on designing specific instruments (Task 5A/B)

Payments for Ecosystem Services (PES) | The booklet 'Laying the Foundation: An Analytical Tool for Assessing Legal and Institutional Readiness for PES' (Hawkins 2011) offers an analytical framework for assessing legal and institutional readiness for PES transactions. Its intention is to offer public sector officials material that can be used to identify options and gaps within in their particular legal and institutional contexts.

The 'Payments for Ecosystem Services – Getting started: A primer report' (Forest Trends et al. 2008) provides detailed guidance on designing PES schemes.

Chapter 7 of the 'Plan Vivo Guidance Manual' (2012) provides specific guidance for designing and implementing payment for ecosystem service programmes with rural communities.

The 'Payments for Ecosystem Services (PES): best practice guide' (Smith et al. 2013) assists with the design and implementation of Payments for Ecosystem Services schemes. An Annex document provides some case studies.

The WWF study 'Payments for Ecosystem Services Literature Review: A review of lessons learned, and a framework for assessing PES feasibility' (Morrison & Aubrey 2010) firstly distils key pre-conditions and considerations for developing a PES scheme and secondly uses these conditions and considerations to develop a framework for assessing opportunities and feasibility of implementing a PES scheme in a given context.

Carbon payments | The 'Guide to Building Redd+ Strategies: A toolkit for REDD+ practitioners around the globe' (WWF 2013) is designed to provide REDD+ practitioners and their local partners with the information necessary to develop national and subnational strategies.

Direct payment (e.g. conservation concessions & contracts, compensation, etc.) | The 'Direct Payments to Conserve Biodiversity' (Ferraro & Kiss 2002) paper describes and critically reviews a wide range of conservation incentives and direct payment schemes, including PES, conservation contracts and concessions.

The 'How should we incentivise private landowners to 'produce' more biodiversity?' (Hanley et al. 2012) paper discusses a number of policy options for providing private landowners with incentives to conserve biodiversity, such as conservation auctions and conservation easements and addresses various policy design problems.

Taxes | The Guide 'Environmental Taxation. A Guide for Policy Makers' (OECD 2011) describes the design of environmental taxes and political economy considerations in their implementation.

Biodiversity offsets, habitat/ mitigation banking | The report 'The use of market-based instruments for biodiversity protection – the case of habitat banking' (ten Kate et al. 2010a) identifies a range of information and experience with habitat banking from around the world and from economic theory, and provides an institutional analysis for practical implementation.

The Business and Biodiversity Offsets Programme (BBOP) (2012) has produced a series of guidelines to help developers, conservation groups, communities, governments and financial institutions seeking to consider and develop best practice related to biodiversity offsets, including: Biodiversity Offset Design Handbook, Biodiversity Offset Cost-Benefit Handbook and Biodiversity Offset Implementation Handbook.

Green products & markets (alternative income & employment sources) | 'Harnessing Markets for Biodiversity: Towards Conservation and Sustainable Use' by OECD (2003) gives a conceptual framework and real-world case studies to help policy makers, potential investors, NGOs and practitioners in the identification and use of markets for biodiversity products and services that can promote their conservation and sustainable use.

Financial instruments | The Guide to Conservation Finance (WWF 2009) provides an overview of conservation financing mechanisms that have been implemented throughout the world and informs field practitioners about which of the available financing mechanisms they could apply to achieve their conservation aims (also Task C).

Spergel & Taïeb (2008) provide in 'Rapid Review of Conservation Trust Funds' a comprehensive global review of best practices and lessons learned in the development and implementation of conservation trust funds.

Other or various instruments | Chapter 4 of the study 'Economic Instruments in Biodiversity-Related Multilateral

Environmental Agreements' (UNEP 2004) suggests some thematic areas where the use of economic instruments could be further developed and discusses the conditions for the successful implementation of such instruments.

TEEB for Business (2012b) WRI (2008b), and WBCSD (2011) explain how an ecosystem service approach and valuation can help motivate business actors to contribute to safeguarding ecosystems and biodiversity.

UNDP (2012) has produced guidelines on 'Multi-Stakeholder Decision-Making. A Guidebook for Establishing a Multi-Stakeholder Decision-Making Process to Support Green, Low-Emission and Climate-Resilient Development Strategies'.

The WWF field guide 'The Green Buck: Using economic tools to deliver conservation goals' (Le Quesne & McNally 2005) describes and illustrates on case studies examples three main areas of economic instruments for conservation.

Guidance on selecting and conducting additional supportive analyses (Task 5C)

The website of the ValuES project (GIZ et al. 2014 – www.aboutvalues.net) is a particularly relevant source of further guidance on approaches and methods for ES analyses (see Appendix E).

UNEP (2010) provides a guidance manual for valuation of regulating ecosystem services.

InVEST is a set of tools provided by the Natural Capital Project (2012) to map and value ecosystem services in order to better align economics with conservation.

Emerton (1998) describes the rationale and different methods, as well as the limitations of economic valuation of biodiversity and ecosystem services.