MERLIN
OFF-THE-SHELF INSTRUMENT

Public-Private Partnerships

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CONNECTOLOGY

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Publishing information

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Executive summary

The world's environment is under pressure, and climate change is expected to worsen the situation, posing severe threats to human well-being and economic prosperity. Ecosystem restoration and freshwater management are crucial to mitigating this change, particularly the restoration of streams, rivers, peatlands, and wetlands.

The MERLIN Project thrives on finding innovative solutions to enhance this vital process for our planet and humanity; Public-Private Partnerships can be an essential option.

Public-Private Partnerships (PPPs) align the public and private sectors to enhance public services or the common good. Depending on the parties' roles, this form of collaboration can take various forms.

Traditional Public-Private Partnerships (PPPs) have been conceived and executed with an emphasis on the economic aspect of development. These initial forms employed a **Value for Money (VfM)** approach, which involved assessing **how effectively the private sector's contributions serve the public interest.** With the adoption of the UN 2030 Agenda centred on sustainable development (SD), also known as the **Sustainable Development Goals (SDGs)**, the concept of PPPs for the SDGs (often termed People-first PPPs) has gained prominence. **In addition to Value for Money (VfM), Values for People and for the Planet have been incorporated into the design, execution, and management of PPPs.**

Public-Private Partnerships (PPPs) are a process of public investment, serving not as an objective but as a means to an end, which implies that the public sector should establish the aim to be achieved. Given that objectives should reflect the public interest, the involvement of communities and stakeholders is now considered essential in PPPs. This suggests that **PPPs represent a partnership between the public sector, the private sector, and civil society.** Nature-based Solutions (NbS) PPPs would focus on Goals 6, 12, 13, 14, and 15 (clean water and sanitation, responsible consumption and production, climate action, life below water, and life on land, respectively). However, these will be integrated into PPPs for the Sustainable Development Goals (SDGs) following the principle of indissociability among the three dimensions of sustainable development (economic, environmental, and social).

Among the various types of PPPs, some processes generate sufficient funding to repay the involved financing amounts, classifying them **as commercial PPPs**, while others necessitate funding from the public sector, referred to **as social PPPs**. Some PPPs may be **hybrid**, utilising resources from their revenue streams alongside contributions from public budgets.

The relationship among the parties can be implicit; the public sector, for example, acts as a conceding entity, while the private sector serves as the concessionaire—the entity responsible for implementation and management. Alternatively, the relationship can be explicit, meaning both parties are partners in the organisation tasked with improving public service.

The main reasons for establishing PPPs involve innovation, financing capacities, and risk management abilities. The private sector typically deals with these challenges, and the public sector is directly involved with public interest in the short and long term. **One key aspect to remember is the need for the private sector to be profitable; this means that the PPP business design should incorporate this principle.**

Considering the principle of **"The Future We Want"** from the SDGs, PPPs should aim for the common good and address the needs of stakeholders and public managers, while also allowing private entrepreneurs and capital providers to expect a return. This suggests that PPPs represent structures that are more complex than those typically seen in standard transactions or processes; however, when properly organised, they should be quite resilient.

If you have any questions regarding certain terminology used in the report, please refer to the glossary at the end.

We hope this report is interesting and valuable for your ecosystem restoration projects and Nature-based Solutions.

Good luck!

Aim of the instrument

Nature-based Solutions (NbS) harness the power of ecosystems to address social challenges such as climate change, disaster risk reduction, and water management. **Implementing NbS through PPP requires careful planning, collaboration, and sustainability.** Considering the SDGs implies simultaneously taking into account the three dimensions of sustainable development: social, environmental, and economic. PPPs for the SDGs have been studied, and the NbS approach has been included. This document will address PPPs for the SDGs (also called People-first PPPs) and NbS in an integrated form. However, the general focus will be placed on the challenges of designing and implementing PPPs, which apply to all types of cooperation mentioned above.

The impact of PPPs can be drastically increased with the help of a regional development pipeline of projects. These projects should be supported by visions and strategies co-created with local communities, public servants, entrepreneurs, and academia.

Indeed, an advantage that project developers have when trying to finance NbS projects through PPPs is an understanding of the expectations of each party. Namely, they understand the role of the private partner that will be investing and, therefore, is expecting a return from the amounts provided.

The instrument aims to set the tone for creating favourable PPPs for the SDGs and NbS ecosystem. Various parties must understand their differences and roles, and work together to generate a compromise that allows a transformational process to occur. When based on transparency and a governance model in which all feel represented, this model will simultaneously enable decisions and objectives to be achieved.

Potential beneficiaries

The public interest and the common good have the advantage of serving communities. **When a project is associated with healing, restoring, and protecting nature, it enhances long-term stakeholder interest.**

Besides the overall stakeholder interest, the beneficiaries can be found in **all four sectors**.

1st sector: The beneficiaries of the public sector include **public servants, public managers, nature restoration managers, and elected politicians**. As stakeholders, they recognise that they must defend communities and make them prosper, and must protect and heal nature today and in the future.

2nd sector: The private sector beneficiaries include the **development and asset management ecosystem** composed of designers; equipment and technology providers; service providers involved in transformational projects and asset management; and capital providers who, through investment and lending, will benefit from enhancing a process that enhances natural capital for communities, on top of their returns and interest.

3rd sector: Civil society beneficiaries include **those who reside, work, or visit the region** and benefit from the improved natural environmental ecosystem.

4th sector: The academic beneficiaries involve **students, professors, and researchers** who use transformational processes to support and improve knowledge regarding environmental ecosystems, the technology used for upgrading, and the institutional evolution that results from the cooperation activities.

How do PPPs for SDGs work?

Cooperation can be challenging, but the outcome can be exceptional when the right partners meet. Therefore, human and business chemistry are essential to forging and maintaining a **Win–Win–Win relationship between the public, the private, and civil society.**

Establishing and managing this dynamic must incorporate each party's DNA. Five **steps are usually associated with successful PPPs.**

Step 1: Conceptualising, defining visions, and Win–Win–Win alignment

A concept is a qualitative solution to solve a pathology, or an answer to a common desire. **The development of an idea can come from any of the sectors.** It can be identified in and have an initial design from the public sector, but it can also result from a private or community proposal. Once it has been established that the solution will be implemented using a PPP, the initial and most crucial step regards the purpose and the motivation for the partnership to be created. SDGs are about designing and implementing "The Future We Want," and this is key for everything that follows.

What is the parties' vision for a specific region, activity area, and living environment? Each party has its own DNA and motivation, but common ground must be found.

Once a shared vision or visions are agreed upon, it is time to define objectives and strategies to achieve them.

The most obvious challenge is to recognise that the private party, on top of any social or environmental agenda, has a prosperity and profit agenda. Accepting this motivation, as well as identifying what the acceptable amount could be, will facilitate crossing over different perspectives. Once the profitability angle is agreed upon, interests should be aligned, and strategies should converge.

Likewise, clarifying the expectations of those managing the public interest and the communities is vital. Public and community interests are assumed to be aligned in the first approach, but this is often untrue. Political expectations are sometimes ego-centric rather than people-centric, and this type of motivation could become challenging when managing a PPP.

This initial alignment involves rational and emotional approaches. Time is crucial for creating a solid base and establishing the game's governance rules.

Once a concept is associated with a shared vision, it can proceed to the second step.

Step 2: Testing the concept and ensuring feasibility and viability (Due Diligence)

Although the concept and the qualitative analysis may seem most intriguing, **the process needs to be tested quantitatively in terms of technical, legal, economic, financial, social, and environmental aspects to ensure its feasibility and viability.** This second phase often requires the involvement of specialists in each of the areas described before. **Testing is essential for investors and lenders, as they will take the most critical financial risks.** Often, it is not a question of deciding whether to proceed, but of structuring a solution that answers all criteria.

Once the idea is tested and becomes a project, it is time to contractualise the relations between all parties.

Step 3: Contractualising – agreeing with a legal and workable framework

After testing, it is time for all parties to formally agree to their contributions to the project, which means transforming it into a business.

The public sector commits to seeing the asset used and the public service provided. Land and permits commonly involve the public sector, but they can also represent the remuneration of services offered by the private sector.

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The private sector is frequently responsible for designing, building, and operating a new asset. The amortisation of this investment can be associated with a revenue stream that allows the financing to have the necessary funding. **The PPP is commercial when the asset operation generates enough cash flow to cover the investment. If the asset operation requires subsidies or a revenue stream guaranteed by the public sector, the PPP is social.** Contracts with investors and lenders are essential to formalise this phase.

Civil society expectations, such as training residents and developing social facilities like schools, green parks, forest plantations, and bike lanes, should also be part of the contractual framework when parties are in the negotiation.

Proactive academia is becoming a vital stakeholder, responsible for providing or facilitating education, and acting as a neutral broker throughout the transformational process.

Once the action plan and each player's role are formally recognised, it is time to move to the next phase, where transformation occurs.

Step 4: Transforming – asset or process development

Now that all parties have agreed upon what to expect and what needs to be done, it is time to implement the transformation on the ground. Whether it consists of a greenfield project (new), a brownfield project (transforming something that exists), or simply a new or revised process, **the required resources must be managed in time, cost, and quality.**

This is the time for careful project management, which requires a holistic view of the type of public service provided. **Often, the best way to organise the work is to plan backwards.** This involves understanding the different phases and specialities involved in defining the critical path of the process. Simultaneously, it consists of understanding and taking parallel actions while the critical path occurs.

First, **the link between design, procurement, and construction must be optimised** to avoid unnecessary repetitions or corrections that represent extra time and cost.

Secondly, it is necessary that **all of the different specialities represented know the expected deliveries well and understand their respective relationships with others.** Synchronisation ensures that the general output will provide the expected public service.

Two key aspects of transformation are obtaining all required permits before performing the associated task, and knowing the process and timing. The public sector usually provides permits, and the permitting authorities oversee the process and timing. If an action is put on standby due to missing permits, it will involve extra time and costs and affect the project's overall productivity.

The second key aspect is that service, equipment, and material providers expect to be paid on time. A delay in paying suppliers will affect their performance, consequently affecting productivity and, eventually, the quality of the process.

Therefore, **project managers responsible for the transformation must have the administrative work supporting the teams ready on the ground.**

Time management is a primary concern during this phase, and experienced teams will focus on optimising resources and continuously finding ways to reduce time needed to achieve the result. However, this ambition should never jeopardise the safety of all those involved, nor should it allow environmental deterioration. Good project management will, therefore, consider the actions directly involved in the transformation process on the ground, including planning, permitting, financing, safety, and environmental management.

As mentioned above, **the PPP can be implicit or explicit.** It can involve a team from the public sector and another from the private sector, or it can be a mixed team with elements from both. Civil society must also be involved; they should be perceived as the final users and, therefore, the final clients.

In addition to the people directly involved in the transformation process, the project should generate outcomes for and positively impact the communities during this phase. Local job creation, training, and business origination can contribute substantially to the communities, and can develop a virtuous cycle of social development.

Likewise, transformational projects can represent an opportunity to improve the balance between humans and nature. Approaching the territory with full consideration of the impact of solids, liquids, and gases can reduce the project's eco-footprint and gain involvement from stakeholders concerned with environmental impact.

Step 5: Exploitation – asset and process management – providing the public service

PPP is the means to an end (e.g. the process to achieve freshwater ecosystem restoration), and the end is to provide a public service that enhances the quality of life of a community. This means that all steps aim to generate an asset or a process that will improve lives. Although it seems obvious, sometimes individual interests overcome the public interest.

Therefore, **the main question at this stage is whether the deliverable from the transformation stage satisfies the common good.** In practice, this means testing the asset or process as an independent system, and then as part of a larger system.

The testing involves three sub-stages: pre-commissioning, commissioning, and startup. The first sub-phase happens when the asset or process is tested in its components. For example, if we are testing a water treatment plant, the pumps will be tested individually. The second sub-phase is commissioning, which represents the various components simultaneously. In the example of the water treatment plant, pumps, valves, and separators will all be tested together. Therefore, the new system is tested while it is not yet connected to the existing water network. The final stage is startup, when the new system is integrated with the existing network.

Although pre-commissioning, commissioning, and startup testing will identify problems that need fixing at the beginning of the exploitation phase, some issues will arise during the first years of a project. Therefore, a startup assistance phase should be secured during the

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guarantee and warranty phases. This will allow initial adjustments and optimise the system's operation and maintenance.

The exploitation phase encompasses operating and maintaining the asset or process. It can be performed by the public, the private representatives, or a mixed team. In any case, the public sector is responsible for ensuring the quality of public services.

Considering that exploitation is part of the scope of the PPP, operation and maintenance teams will secure and ensure the good functioning of the asset. **If the PPP scope ends with the startup phase, it is vital that the public sector team is thoroughly familiar with the new system and has a way to involve the private sector in any malfunction that was not previously detected.**

Considering that a PPP for SDG approach is in place, as at the transformation phase, the social and environmental dimensions shall involve a broader involvement beyond the traditional PPP scope of providing a service. Here, **local job creation, regional businesses, and the environmental impact on the territory shall be approached.**

The table below shows some pros and cons for PPPs to be used.

PROS	CONS
→ The PPP model implies negotiation and agreement between parties. → Knowledge transfer to the public sector happens more strongly, mainly when explicit models are used.	→ Considerable time to prepare for a PPP as alignment for visions and strategies is necessary, especially PPPs for the SDGs or PPPs for NbS. → For this reason, the size and time-frame required for the operation may be significant.

It is essential to highlight that although PPPs can be an excellent way to design and implement solutions, they are not a panacea for all challenges. Therefore, it is essential to recognise when a certain PPP model is not a solution as soon as possible, and to abort it. At the end of each step described above, a go/no-go question should be asked. With this process in mind, let's evaluate what could be at stake timewise.

Expected time to implement

The time needed to implement a PPP is linked to the need for the solution, the project's size and complexity, the parties' readiness and willingness to cooperate, and the availability of the required resources.

Consider the five steps described above:

Conceptualising may build from a previous study that has generated a design process. In this case, the next steps are defining an implementation model and adapting how the parties will cooperate. Often, however, the problem has been identified but not the solution. In this case, conceptualising will require time to define a solution, and for that solution to be tested.

If the design solution exists and the parties have cooperative experience involving civil society, then they may consider completing the process in **one semester**.

However, the technical solution of this subprocess may determine the time needed for this phase. An example of this type of PPP was the development of the COVID-19 vaccine. In that case, the research, testing, and permitting phases determined the length of this period.

The second phase involves **testing the technical solution.** It is necessary to analyse whether it is economically and financially feasible and viable; if it represents a social and environmental base; and whether a framework is legal, workable, and can be approved and signed.

Multiple experts provide feedback at this stage, and an integrated multidisciplinary and transdisciplinary concertation needs to be reached. Usually, this involves presenting a technical solution that incorporates social and environmental dimensions, and creating an economic and financial base to support it, followed by a legal framework.

Again, depending on the team's experience, testing can take a **couple of months for simple projects, or a couple of semesters for longer processes.**

The amount of time needed for the **contractualising phase** will depend significantly on how well the previous phases were prepared. Making financial resources available for the following transformation phase is a key aspect of this phase. If capital providers were involved, or if financial advisors had their support, then the financial contracts may move relatively fast. Less than two months is extremely unlikely, but **one semester could be reasonable** if the due diligence process is solid.

The **transformation phase** is the stage that benefits the most from a PPP solution. At this stage, the differences between the parties should have been dealt with, and solutions agreed upon. The concept should be strong, and testing has undoubtedly helped the parties and specialists to agree on the action plan. This means that capital should be available, permits should be in place, and human resources should involve the local community, eager to start and to achieve the desired output. These are the ingredients for good planning to cover unforeseen but solvable issues.

Empirical knowledge demonstrates that transformation typically takes the same amount of time for midsize transformational projects, considering the initial phases take **one or two years**. This time will grow for complex or large-scale projects.

It is essential to recognise that the private sector gains from PPP solutions if the time needed is less than expected. This means that costs can likewise be less than expected, and margins can grow. This potential extra margin can be distributed between the parties.

Exploitation is usually associated with the asset's service life once delivered. This time frame varies according to the type of infrastructure, with dams and reservoirs lasting a hundred years and pavements lasting two decades.

The private interest is to move up the delivery date to reach the exploitation phase associated with the revenue stream and cash inflow sooner. However, eagerness to achieve this phase should not reduce the quality of the asset. The quality of the products used will influence the amount and cost of maintenance. The transition from transformation to exploitation is key to ensuring the quality of public services. This transition generally takes two years.

Set-up and operational costs

PPPs provide a method for investing in and executing public projects to enhance public services. Costs are a direct function of the global investment value necessary to create a new or transform an existing asset, called **capital expenditure (CAPEX).** Once the asset exists, the costs associated with its operational costs are called **operational expenditure (OPEX). PPPs can also be associated with a service. In this case, the CAPEX is the investment in creating or transforming a process, and the OPEX concerns its operation and maintenance.**

Therefore, the costs of a PPP can be incorporated into the development and operation of an asset or process, which would exist whether developed through a PPP or not. However, developing and implementing a PPP can have additional costs associated with the process related to this development model.

Two main reasons for adopting PPPs are access to private capital and achieving efficiency (including optimising risk management).

When a value-for-money evaluation is done, it is envisaged that the PPP will generate a greater return to the public sector, especially considering an asset life cycle approach. This means that **although a PPP can and should decrease the public sector's costs, it requires a preparation phase with higher costs in its initial phase.**

Here are some preparatory efforts for PPPs that may represent significant costs.

A good PPP implies good design, build, financing, operation, and maintenance (DBFOM). As mentioned above, each phase requires a holistic perspective on public services; a systemic vision of how assets interact; and transdisciplinary knowledge, including in sociology, engineering, economics, and law.

This integrated approach is required because a key aspect of maintaining a PPP is visualising how public service will be provided, anticipating all phases, and predicting how all players will interact to make this vision a reality. This knowledge grows with experience; therefore, PPP specialists are practitioners who have designed, implemented, and managed these processes. This expertise is usually associated with above-average hourly rates.

The preparatory costs are therefore associated with involving these experts in these processes throughout the lifecycle, particularly in the initial phases.

Note 1: Preparatory efforts, like geological surveys, are considered necessary regardless of whether a PPP methodology is used.

Note 2: Engineering and Capital Expenditure expertise are essential and will vary with the type of lifecycle considered. A build, operation, and maintenance approach will look for an optimised overall value that may represent a more substantial investment value during construction, such as using better materials to reduce operation and maintenance costs.

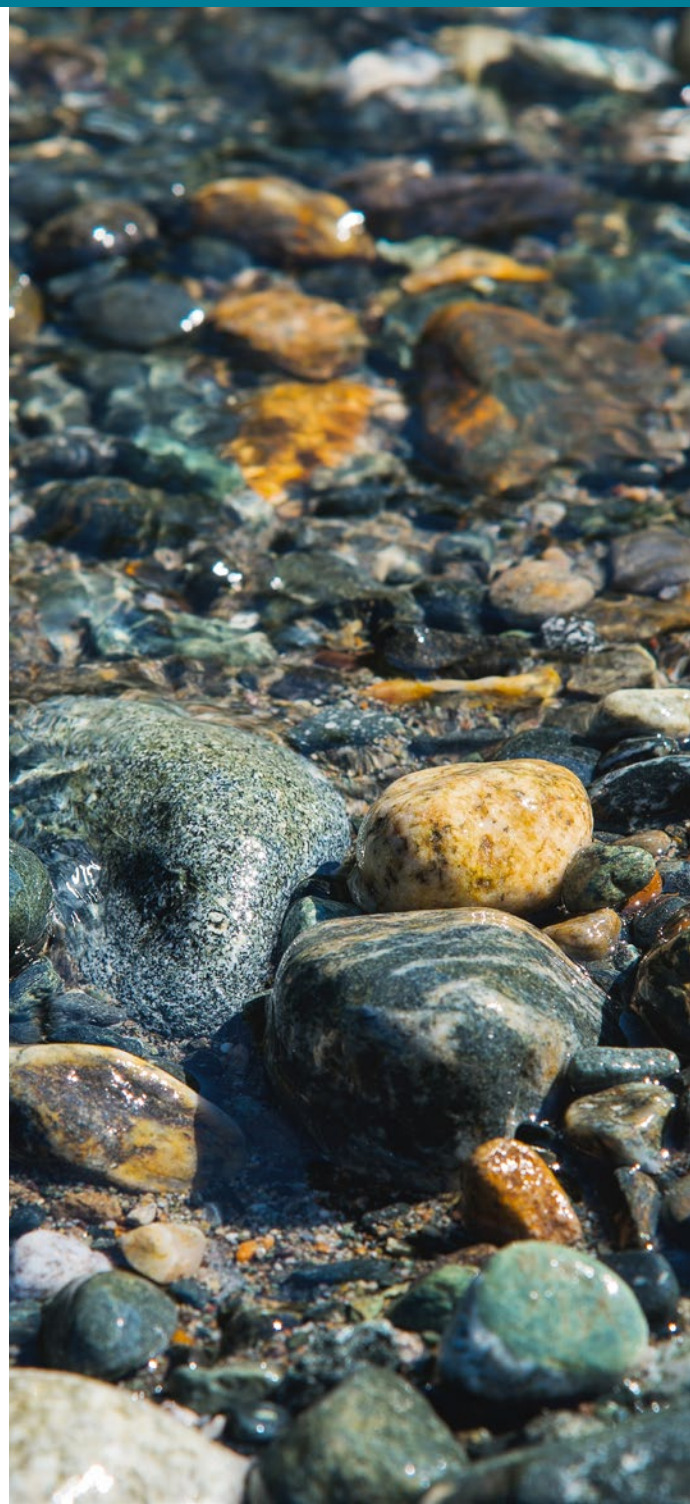
Also, a PPP expert is usually more creative in design, construction, and exploitation, and therefore, the tendency is to reduce overall costs.

Note 3: The PPP financial expert understands the relationship between **project deliveries and cash flow availability** well, which allows a more realistic perspective on financing needs. Simultaneously, this expert should promote a **solid risk analysis.** A solid perspective on risks and financial needs should reduce the need for financial resources and decrease the cost of capital.

Note 4: A PPP legal expert understands the **public risks** associated with central and local governments, such as permitting and land rights, and the private risks involving the relationship between suppliers, developers, investors, and lenders. When a PPP is created, all those risks are combined. **Anticipating all possible issues early, and designing legal mechanisms to overcome unforeseen challenges,** represent investing in preparation and upfront costs.

Note 5: PPPs for the SDGs, also called people-first PPPs, are people-centric. This means that preparing the PPP prioritises a positive social impact, which involves everyone directly involved in the process as well as the geographical communities. This is likely to represent upfront costs that the social support of the project will undoubtedly compensate.

Note 6: SDG PPPs also aim to reduce the ecological footprint, which may represent upfront costs but will enhance the **Value for the Planet.**



Prerequisites to implement

Solid, flexible, transparent, sustainable public policies focused on the common good are key for PPPs.

The quality of public policies is a critical aspect of PPPs. Good policies play a crucial role in the success and effectiveness of PPPs because they provide the framework within which these partnerships are structured, implemented, and managed. The politicians or public servants who implement a PPP must have the political (local and national) support to make it happen. Otherwise, the project will never succeed because there are always excuses to delay or abort initiatives.

In freshwater ecosystem restoration projects, people will always argue that the best action is not to do anything and to allow nature to solve the problems.

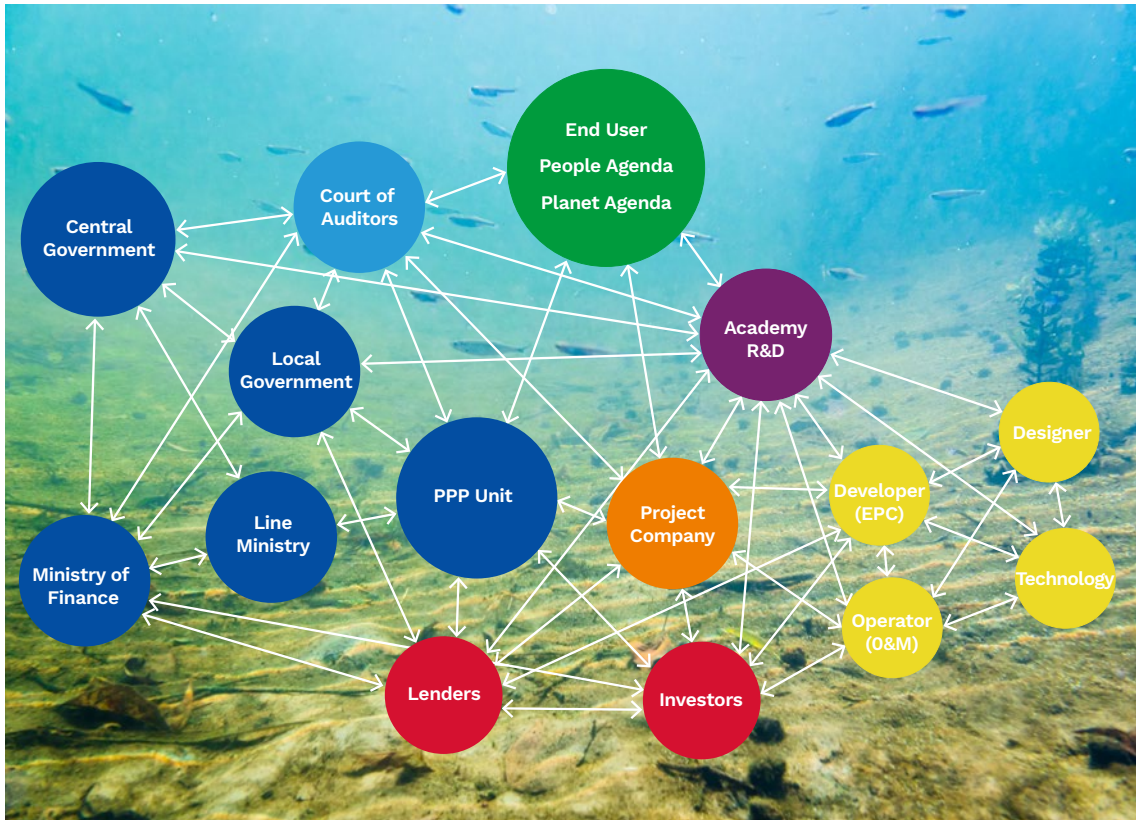
Public policies promote stable legal and regulatory environments, which help the public and private partners understand their roles, responsibilities, and rights. This creates a predictable environment, which is essential for attracting investors.

Public policies tend to prioritise projects that address public needs. However, PPP management will enhance transparency and accountability in public investment.

The private sector's flexibility and appetite for innovation allow for enhanced productivity that can be transferred to public sector management and improved public policies. This is particularly true for PPPs related to the SDGs, where social and environmental aspects must be incorporated into transformational projects and asset management.

An environment focused on the common good and on long-term and shared prosperity, that is transparent and flexible to incorporate innovation based on sustainable development, will promote trust (social capital), an essential ingredient and prerequisite for PPPs to thrive.

Players in the market



The PPP market ecosystem is complex, with multiple players interacting with each other simultaneously.

A PPP for the SDGs is considered a people-centric environment. It all starts with civil society, the end user and the final client (represented by the green dot on the PPP ecosystem diagram below). The most **crucial aspect** of making PPPs work is shifting from the **binary perspective**, with the public sector on one side and the private sector on the other, to a **geometry** where the public and private teams serve the people. This implies three groups of players.

The simplicity of the PPP keyword reflects a network involving a partnership among public partners. Central and local governments are the prime movers and must be aligned. Within the government, it is also vital that an alignment exists between the line ministries responsible for providing the public service. For example, the Environmental Minister is accountable for delivering freshwater services representing the water ecosystem, and the engineers, scientists, and technicians are required to provide the services and ensure the quality of the water.

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However, this line minister must be aligned with the finance minister, who will be responsible for the government's financial commitments.

As PPPs are complex, a PPP unit is usually created to secure and manage all internal and external interfaces.

The court of auditors is a key public sector player, and the independent guardian of the state's financial interests.

The blue dots on the PPP ecosystem diagram represent the public sector.

In the private sector, a sub-ecosystem exists with two subgroups. The first is led by the developer, who oversees the coordination of the design, procurement, technology, construction, operation, and maintenance (the yellow dots represent the private sector development side). The other sub-group comprises capital providers, including investors, equity providers, lenders, and debt providers (the red dots represent the private sector capital providers). The yellow and red dots typically create a project company that combines private interests, depicted in orange.

This complex ecosystem changes as the projects evolve. It is also affected by external forces from within the country and internationally. Therefore, it is very dynamic.

The academia represented by the purple dot is a knowledge centre responsible for tracking the processes, benchmarking them against other PPP ecosystems, and promoting research in this critical area of institutional innovation.

Following the geometry described above, starting at the global level, the most widely recognised organisations are:

PPP multilateral organisations

- United Nations (United Nations Economic Commission for Europe) unece.org/ppp
- World Bank Group ppp.worldbank.org/public-private-partnership

PPP central – regional – urban references

The UK government has pioneered PPPs at the central and regional government levels. Within the UK, the governments of Scotland and Wales have developed and implemented remarkable PPP models known:

- In Scotland as the Non-Profit Distribution, and www.gov.scot/publications/scottish-public-finance-manual/public-private-partnerships/non-profit-distributing-public-private-partnerships/
- In Wales as the Mutual Investment Model www.gov.wales/mutual-investment-model-infrastructure-investment

Canada is also considered a leader in PPP development: www.pppcouncil.ca/

Considering urban PPPs, Brisbane in Australia, with the preparation of the 2032 Olympics, is a salient reference: www.brisbane.qld.gov.au/planning-and-building/planning-guidelines-and-tools/brisbane-city-plan-2014

PPP engineering and developers

Among developers, prominent references include:

- Macquarie from Australia www.macquarie.com/ie/en/search.html?q=ppp
- Vinci from France www.vinci.com/en/recherche?q=ppp
- Royal HaskoningDHV from the Netherlands www.royalhaskoningdhv.com/en/about-us
- SWECO from Sweden www.swecogroup.com

PPP investors

Among investors, key references are the International Finance Corporation (IFC) from the WBG, the European Investment Bank, and the Inter-American Development Bank (IDB).

- www.ifc.org/en/what-we-do/sector-expertise/public-private-partnerships
- www.eib.org/en/publications/2023-0003-epec-ppps-financed-by-the-european-investment-bank-since-1990-to-2022
- idbinvest.org/en/solutions/advisory-services/public-private-partnerships

PPP lenders

Among the commercial banks, the debt providers HSBC, Standard Chartered, and BNP Paribas are considered important references.

- www.hsbc.com
- www.sc.com/en/about
- group.bnpparibas/en/group/about-us

How to design and implement a PPP for SDG and NbS

This section will focus on implementation, considering what was shared about how PPPs work, the time frame for each phase, the associated costs, the prerequisites for implementation, and the relations between the players.

Note: The public sector usually initiates PPPs, but the private sector can also launch them. In this case, they are considered unsolicited proposals. **In many of the MERLIN case studies, there are many opportunities for NGOs or project managers to launch PPPs without waiting for politicians to take the lead. An entrepreneurial attitude is essential to make things happen.**

Step 1: Visions and strategies

PPPs are a means to an end, and the ultimate objective is always to improve communities' quality of life. This means **that the starting point should be defining a clear vision or visions for "The Future We Want" for a specific territory.**

Engaging stakeholders is a complex process that involves communities and requires effective stakeholder management to define objectives and implementation strategies. When this process occurs, communities support the PPP, thereby influencing its design and implementation, which results in more significant outcomes and impacts.

Let's consider that a vision exists that leads to analysis and the definition of implementation strategies. At this stage, PPP should be an option; other options include developing the project using a traditional public approach or considering an entirely private project.

Step 2: Ensuring trust is in place

PPPs are usually associated with the public party's ability to trust and cooperate with the private party. In a public project, the public party will always be the one to accept cooperation with a private party. Trust is essential and needs to be built among the parties. If the public partner does not have experience managing PPPs or a specific project type, the public sector teams must reinforce and involve team members with this expertise.

At this stage, there is a vision and an agreement to develop the solution through a PPP. The next step is to choose a private partner.

Step 3: Choosing the right partner(s)

Choosing a partner is challenging and often requires more than one step. **The first round of selection, called prequalification, frequently evaluates a private partner's knowledge, experience, and ability to manage and implement a solution through a PPP.** This process aims mainly to define a shortlist of potential candidates. This stage is ordinarily qualitative. The concept and process must clearly define what is expected from the private partner to attract suitable candidates.

The second round involves selecting the best candidate. Usually after written offers are made, the process involves direct negotiations, with a certain degree of adjustments expected to optimise the base on which the PPP will work.

These two phases can be merged to save time. However, as mentioned earlier, preparation, namely establishing the governance model that the PPP will follow, is essential. **The timeframe for PPPs typically takes more than one decade, so the initial phase should be six months with this longer-term perspective.** Choosing a good partner and establishing a solid cooperation base are key success factors for PPPs to thrive.

PPPs can also be implemented through unsolicited proposals. In this case, the private partner presents a solution to the public partner. As the problem was identified and the potential solution developed at the private partner's expense, these costs are expected to have a trade-off. To compensate the private partner and consider a competitive process that will be put in place, the proposed candidate can have the right to a first refusal, or to see the costs compensated in case a different candidate is chosen.

Step 4: Setting the governance model

Often, PPPs are compared to marriage; setting a good governance model is vital to managing expectations and avoiding divorce, which is very expensive.

The economic and financial model forecasts developments during the PPP period, and it is vital that both parties are comfortable with the assumptions made and the anticipated outcomes.

Although each party will possess an economic model, a level of transparency must be mutually agreed upon to ensure a smooth process throughout the lifecycle, particularly if it is not a formal PPP.

For an explicit PPP, where a standard **Special Purpose Vehicle (SPV)** exists for both parties and the board of directors includes members, one model for both parties is the rule. This will undoubtedly be crucial for decision-making processes and conflict management.

The economic model includes the financing model, and therefore, equity and debt contributions and profit sharing will be reflected in this document. In addition to this model, **it is essential to set social and environmental guidelines to ensure that value expectations for people, the planet, and money are managed simultaneously.**

These models and principles will be the basis for decision-making processes. Still, a transparent shareholders' agreement must be in place in addition to the articles of association.

It cannot be overemphasised that PPPs are complex organisations to manage. Aborting them has high direct costs and considerable social, environmental, and political costs. This means that embracing the fragility and challenge of cooperation is essential to doing the work.

Step 5: Setting the team

In the end, it is all about people!

There are **four levels of cooperation: shareholders', management's, operational, and stakeholders'.** All must embrace and embody the spirit of collaboration. A win–lose approach will lead to conflicts that may jeopardise the PPP, making team selection critical for the project's success.

People representing the public interest must not have biases against the private sector. If so, success in the PPP will be almost impossible.

Although the PPP formally has two sides, representing the public and private sectors, civil society is also part of it, whether officially involved or not. This means the **Win-Win-Win spirit must be part of the PPP culture.**

With a clear vision and strategy established, a carefully selected cooperation model, built trust, an implemented governance model, and teams embracing an infinite game perspective, it is time to move forward and evaluate whether the process is progressing.

Best practices

Nature-based Solutions (NbS) in Public-Private Partnerships (PPPs) tackle social challenges such as climate change, disaster risk reduction, and water management. Below are some best practices for NbS PPPs, which align with the PPPs for the Sustainable Development Goals (SDGs) approach.

1. **The NbS and the people-first principle** can and should always be aligned. This means multi-stakeholder involvement—comprising governments, the private sector, civil society, and academia—from the project's early stage to completion.
2. **This results** in participatory planning through co-design and co-construction, reflecting the priorities of all stakeholders.
3. **Solutions** should be based on science and evidence-based design.
4. **Model scenarios** to evaluate and optimise the impact of NbS under different environments and climates.
5. **Align objectives** with environmental and social goals, focusing on enhancing and protecting biodiversity.
6. Ensure that NbS PPP projects improve local livelihood and **resilience**.
7. **Align PPP projects** with climate goals, circular economy, and water management.
8. **Pursue innovative, transparent, and equitable financing**, combining public, private, and philanthropic financing and funding through blended finance mechanisms.
9. **Incorporate valuation** of natural capital and benefits, such as carbon sequestration, water filtration, and flood mitigation.
10. **Use financial incentives**, including tax breaks and payment for ecosystem services, to encourage and enhance private sector participation.
11. **Ensure good governance models** for monitoring and evaluation. This implies clear metrics, regular reporting, and independent validation.
12. **Align projects and programs** with national, regional, and local environmental and social policies, enabling the design and implementation of new environmental policies.
13. **Ensure transparent regulatory processes** to facilitate permits and approvals; this is a critical path for project implementation.
14. **Equip local communities, the government, and the project team with skills** to manage and maintain NbS.
15. **Conduct SDG and NbS awareness campaigns** that demonstrate the expected impact and the added value of stakeholders in the process.
16. **Knowledge sharing** involves collecting experience from existing projects and transferring the acquired knowledge to others. On-site peer-to-peer learning events are essential for showing, sharing, and learning.
17. **Put risk management mechanisms in place** to anticipate environmental, economic, and political changes impacting the communities. This implies scenario planning, buffer mechanisms, including access to contingency funds, and insurance mechanisms involving public and private operators.
18. **Community resilience preparation** includes community preparation and readiness to face predictable and unpredictable phenomena.
19. **Ensure operation and maintenance plans** are designed and managed once the transformation phase is complete.
20. **Keep a legacy in mind, and act for the next generation** (babies not yet conceived). Ensure the solutions continue to be optimised according to long-term changes so that the NbS are sustainable, scalable, and impactful.

Suggested Key Performance Indicators (KPIs)

"*You can't manage what you can't measure*", said Peter Drucker.

PPPs are challenging to manage as they incorporate multiple dimensions, phases, and specialisations, as well as a multidisciplinary team from the public sector, private sector, and civil society. All these teams aim to enhance quality of life, making measurement in this environment even more critical. Taking a people-first and NbS approach, let us adopt a People, Planet, Prosperity, and Governance framework:

1. A **social impact** approach that comprehends community benefits necessitates directly involving the local population and improving the public services provided. Under this vector, the number and quality of local jobs created should be evaluated. Also, what contributed to poverty alleviation, in terms of numbers and income levels? In general, use an indicator for shared prosperity.

2. Within **environmental impact**, measure the carbon footprint reduction observed as a result of the project, the improvement of the circular economy, reduction of material use, redesign of materials and products, waste recapture, water management indicators, and energy efficiency. On this front, biodiversity protection and actions to restore natural habitats should also be measured.

3. **Economic impact** indicators are vast and consider financial performance, including cost efficiency, revenue generation, return on investment (ROI) for public and private partners, funding utilisation, and debt service cover ratio, to ensure the asset can meet debt obligations. They also consider the level of project delivery, including the relation between scope delivery, time used, and costs involved. Finally, they should measure the quality of services provided, taking a comprehensive view including service availability, operational efficiency, and user satisfaction.

4. **Governance impact** is key to securing mutual understanding, long-term commitment, and alignment among all parties. Here, aspects that should be measured include the level of contract compliance, the availability of transparent information for decision-making, the quality of internal and external audit reports, and stakeholder engagement.

Case studies

1) The Danube River Basin

Donau-Auen National Park, © Kovacs

Context and background

The Danube River Basin is Europe's second largest and most international river basin, and a significant lifeline for Europe. On its 2,800 km journey from the Black Forest to the Black Sea, the river passes through ten countries and drains all or part of nineteen countries. Approximately 83 million people live in the Danube River Basin, and more than 20 million people depend directly on the Danube for their drinking water.

The challenge

Over the past 150 years, the Danube basin and its wetlands have been badly abused. Dikes, dams, cuts, bank fixation, and dredging have modified large parts of the river system. More than 80% of its wetlands have been lost, and with them, the ecosystem goods and services they provided. The effects have been wide-ranging and include plummeting fish and wildlife populations, decreases in water quality, and damage to wetlands. The decimated wetlands are no longer able to provide much-needed biodiversity hotspots or act as buffers to floodwaters—services that are becoming even more valuable in the face of climate change.

The solution and implementation

The Living Danube Partnership is a unique cross-sector collaboration that unites WWF-CEE, the Coca-Cola Foundation, and various stakeholders to improve watershed health in the Danube basin. The initiative aims to strengthen climate resilience while benefiting local communities and nature.

The goals are to leverage collective action to:

- → **Implement restoration** of floodplains and wetlands, and demonstrate their ecological and socio-economic benefits.
- → **Demonstrate and promote** good water stewardship, particularly concerning water management, Nature-based Solutions, land use, and agriculture practice.
- → **Engage and promote** a change in mindset and awareness of water and water stewardship among decision-makers from politics and business.
- → **Promote a supportive environment** of policy and legislation, finance, and funding, and demonstrate collective action.

The pressing challenges caused by nature degradation, biodiversity loss, and the freshwater crisis are intrinsically linked, and addressing them is critical to mitigating the worst effects of climate change. **Collective action by industry, governments, and conservationists is essential to delivering long-term positive impacts** on nature restoration, protecting crucial ecosystems, and building greater resilience to climate- and water-related risks.

Impact and results

Since its initiation in 2014, the Living Danube Partnership has enabled more than nine projects in six countries: Austria, Bulgaria, Croatia, Hungary, Serbia, and Romania.

Supported by a EUR 3.73 million grant from The Coca-Cola Foundation, the first eight-year phase of the partnership has sought to restore vital wetlands, rivers and floodplains along the River Danube and its tributaries, aiming to increase the river capacity by the equivalent of 4,800 Olympic sized swimming pools (12 million m^3) and to restore over 7,422 football pitches worth of wetland habitat (53 km^2) by 2021. This progress was made possible by building on funding from other partners and initiatives, such as the EU LIFE Nature program, GEF/World Bank, and others.

Altogether, the Living Danube Partnership leveraged nearly EUR 20 million from EU sources for river and wetland restoration, amplifying the impact of The Coca-Cola Foundation's support.

The partnership will continue to focus on restoring essential wetlands, floodplains, and tributaries along the Danube River, building on the success and impact delivered through the cross-sectoral programme over the past ten years.

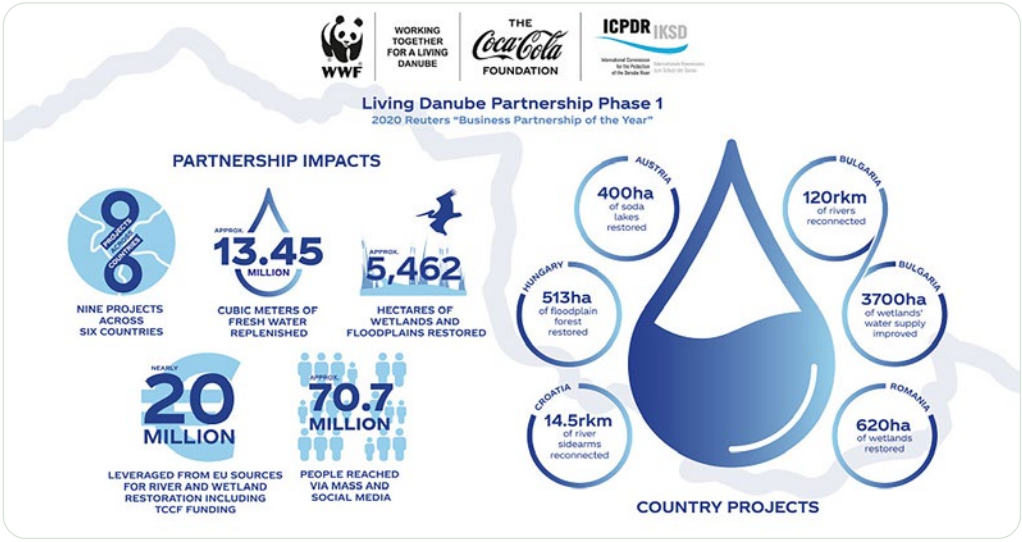
Key stakeholders and partnerships

In the first phase of the partnership (2014–2021), the International Commission for the Protection of the Danube River (ICPDR) joined WWF-CEE and The Coca-Cola Foundation to promote the conservation and restoration of wetlands in the Danube basin.

Restoring rivers and wetlands depends on cooperation among diverse stakeholders. **The Living Danube Partnership has involved collaboration with partners from a range of backgrounds and perspectives, from water management to nature and forest management, municipalities and county governments, landowners and land users, local anglers and hunters, and entrepreneurs.** These partners have united to restore rivers and wetlands to benefit people and nature.

In 2020, Coca-Cola Europe was honoured with the "Partnership of the Year Award" at the REUTERS Responsible Business Awards for its collaboration with WWF-CEE and the ICPDR. The award recognised the Living Danube Partnership's innovative model of cross-sector cooperation.

In the second partnership phase, WWF-CEE and The Coca-Cola Foundation were joined by The Coca-Cola Company in Europe and its bottling partner, Coca-Cola Hellenic Bottling Company (CCHBC). They will support activities that demonstrate water stewardship and engage businesses for collective action. In this part of the programme, there are also three pilot areas for water stewardship development: the Iskar River Basin in Bulgaria, Upper Mures in Romania, and Bereg in the Hungarian Tisza River floodplain. CCHBC will also seek to improve land and water use in the supply chain and natural water retention.



Key partners and supporters infographic

Future outlook

The partnership extension will focus on projects across six countries, namely Romania, Hungary, Bulgaria, Ukraine, Slovakia, and Czechia, building on the water resilience work done in many of these countries during the first phase of the partnership. In extending the Living Danube Partnerships, we are expanding the programme's scope from nature restoration towards community resilience, including agriculture and urban interventions. In contrast, in prior years many projects were in remote and rural areas. New project work will include sites in Hungary (upper Tisza floodplain) and the Czech Republic (Krušné Mountains).

The second focus pillar of the Living Danube Partnership is water stewardship. They demonstrate and promote good water stewardship, particularly about watershed management, Nature-based Solutions, and agriculture. To reach good status for the Danube basin, a change in mindset and awareness of water and water stewardship among decision-makers from politics and business is necessary. WWF-CEE works towards achieving a greater understanding within the Central and Eastern European private sector, and willingness to become active stewards of the watershed they are active in or source value from. Collective action on the pilot watersheds Iskar Basin (Bulgaria), Upper Tisza watershed (Bereg region in Hungary) and Upper Mures watershed (Romania) is underway.

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2) Wyre Catchment Natural Flood Management (NFM)

Wyre Catchment NFM

Context and background

The Wyre Natural Flood Management (NFM) project has successfully secured funding, through the sale of ecosystem services, to deliver 70ha and more than 1,000 targeted measures. The measures will store, slow, and intercept water, reducing peak flow to flood-affected communities in the upper Wyre Catchment.

The Wyre Catchment Community Interest Company (C.I.C.) has also been established and has successfully secured EUR 1.5mil of capital to pay for a catchment scale NFM Intervention. This is made up of a EUR 650,000 grant from the Woodland Trust and EUR 850,000 from a nine-year private loan facility. The loan facility will be repaid from buyers of ecosystem services who seek to benefit from the intervention. Farmers and landowners will then be paid to host and maintain the intervention on the ground.

The Wyre NFM Project was initiated in 2019 by a group of partners including United Utilities, Rivers Trust, Flood Re, Co-op Insurance, and the Environment Agency to consider whether or not it is possible to create a commercial business case for natural flood management intervention within an upland river catchment.

Following discussions with Triodos, the original partners agreed that the project should evolve to become a nature-based investment pilot led by Rivers Trust and the Wyre Rivers Trust. Following a successful competitive tender process in 2020, **the Wyre NFM Project became one of four pilot "nature-based investment"** projects across England which received development grant funding from the Esmée Fairbairn Foundation in partnership with Defra and the Environment Agency. **The aim of these pilot projects was to test whether and how private investment capital can be blended with public sector funding to finance natural landscape restoration through development of monetisable ecosystem services such as natural flood management, carbon sequestration, and biodiversity gain.**

The challenge

Collectively, project aims to reduce peak flow by 5–15% in a 1-in-50-years flood event, significantly reducing flood risk to Churchtown and downstream communities.

The solution and implementation

The project will deliver a range of highly targeted NFM interventions which have been modelled to have the biggest impact downstream.

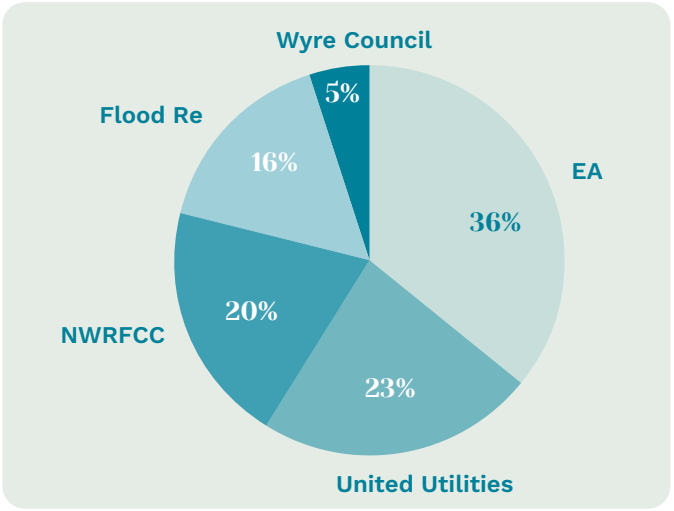
Some of the measures that will be delivered include:

These interventions also deliver other benefits, such as carbon sequestration from woodland planting (which is supported by the Woodland Trust), water quality improvements from reduced wetland creation, and biodiversity improvements from hedgerow planting and grassland conversion.

Key stakeholders and partnerships

Buyers of ecosystem services
There are five buyers of ecosystem services which have been identified: Flood Re, United Utilities, the Environment Agency, Wyre Council, and Northwest Regional Flood and Coastal Committee. These revenue streams enable the payment or financial mechanism by which required upfront capital can be secured from investors to pay for NFM measures.

NFM is the primary ecosystem service being delivered, which aligns with the individual needs of each buyer. Each of the five buyers of NFM services have established their own internal rationale for supporting this project and justifying the contract value amount based on a combination of commercial, strategic, and social value objectives.



The proportional split of the annual contract between the parties or "buyers"

Farmers and landowners
Farmers and landowners play a critical part in the project, as they will host the NFM measures on their land. The Wyre Rivers Trust has been working and engaging with the local farming community for many years, and has co-designed an attractive commercial offer which acknowledges them as early adopters of NFM through an innovative contracting structure. **Farmers entering into a contract with the Wyre Catchment C.I.C. will be paid to host and maintain the NFM interventions on the ground.**

Impact and results

The creation of an investable business model is a fundamentally different approach than usual, as it requires the creation of revenue streams for ecosystem services against which external repayable investment capital can be raised and ultimately repaid.

Wyre Catchment C.I.C. has been established as a not-for-profit Special Purpose Vehicle (SPV) and will act as a local legal entity through which capital will flow for the Wyre NFM Project. The Community Interest Company (C.I.C.) will be limited by guarantee, with an asset lock in place which confirms that any retained profits will be applied for the benefit of communities in the Wyre.

The C.I.C. is run by a board of seven voluntary directors which all represent different stakeholders in the project, including buyers, investors, local farmers, and communities.

Future outlook

From 2022 to 2025, the Wyre Rivers Trust has been contracted by the Wyre Catchment C.I.C. to deliver the capital projects on the ground.

Partners

Environment Agency · FLOODRE · United Utilities · MARHERSTUDY · Esmée Fairbairn · Insurance · WOODLAND TRUST

Project Delivered by:

The Rivers Trust · Triodos Bank · Wyre Rivers Trust "from Bowland to Bay"

Source

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3) Thames Tideway Tunnel "Super Sewer"

Thames

Context and background

London relies on a 150-year-old sewer system built for a population less than half its current size. As a result, millions of tonnes of raw sewage overflow into the River Thames each year. **The EUR 5.7 billion Thames Tideway Tunnel (TTT) is being built to tackle the problem for at least the next 120 years, and will enable the United Kingdom to meet European environmental standards.**

Even though it's an infrastructure project, the main environmental benefit is restoring the natural balance of the Thames. Large-scale infrastructure like this can drive conservation by improving ecosystem health, protecting biodiversity, and delivering long-term environmental benefits.

The TTT is the largest water infrastructure project in the UK. It involves the construction of a "super sewer" tunnel that will run for 25 km through central London, following the route of the River Thames. The completed tunnel will modernise London's sewerage system by reducing untreated discharges from sewage overflows into the River Thames by tens of millions of tons per year.

The programme's scope of works includes two new significant tunnels, 7 km and 25 km long, up to 75 m deep, across 24 live works sites in central London with complex infrastructure constraints, including multiple underground rail lines and stations.

The tunnel, funded through customers' bills, was initially estimated to increase bills by up to EUR 134 per year. However, due to the competitive procurement process, the increase is expected to average EUR 33–41 per year.

The challenge

Large, complex programmes of this type traditionally experience a less than cooperative approach between client and contractor teams arising from a lack of cohesion between client and contractor. This leads to scope, cost, and schedule issues that are often inefficiently identified, understood, and resolved.

Initially, Thames Water was to take on too much financial risk without government support, and the UK Government had little appetite for underwriting all of Thames Water's risks and debt.

Projects of this scale traditionally suffer from an imbalanced risk allocation between the client and contractor due to a lack of investigative work and consultation during the planning process. This precludes the optimal allocation of risk and often results in insufficient contractor appetite to deliver large complex projects, such as TTT. It also may mean contractors price substantial risk premiums into their tenders, or inappropriately apply their risk experience from smaller-scale infrastructure projects to large-scale civil projects.

Thames Water needed to procure this programme with a blend of private financing and its funds, and to create a robust delivery model to:

- → Minimise reliance on any single contractor
- → Maximise risk transfer to contractors where efficient
- → Ensure effective incentivisation aligned with the project objectives

The solution and implementation

The TTT programme saw the project owner, project management consultants, and delivery consortium members all operating under an "Alliance Framework." The teams co-located to create alignment in outcomes, facilitate easier knowledge sharing and issue resolution, and encourage issues to be addressed collaboratively:

- **Under the collaborative working model, the alliance framework members cooperated as an integrated team, with the parent company identity "left at the door."** All parties shared a standard set of goals and worked under aligned incentives, focused on generating programme and cost efficiencies and leading health, safety, well-being, and quality standards.
- **To encourage collaboration and alignment of outcomes, the project owner implemented various incentives,** including HSW, social impact, project controls, and project performance incentivisation, at multiple levels, from the overall programme to consortia to a single entity.
- **Through project performance incentives, the contractual arrangement was set up for risk mitigation and early identification of potential issues.** Payments (including pain-share / gain-share mechanisms) provide the project owner and its contractors with financial incentives determined on a sliding scale to incentivise parties to reduce overall programme length and improve the management of cost and associated risks.

The project owner was also provided with a government support package to mitigate high-impact but low-probability scenarios during construction that would have impacted the project's financing. The support package included:

- Playing the role of "insurer of last resort" by providing cover for insurable events above the amount the market was able to cover
- Providing equity financing to fund cost overruns above a certain threshold
- Having the option to discontinue the project and compensate equity and debt investors
- Providing EUR 600 million of liquidity in the event of market disruption.

The TTT programme used **early contractor involvement** through a six-month optimised contractor involvement phase (under the alliance framework) after contract award. This phase allowed the contractor and project owner to collaboratively explore how design elements could be changed to improve the project.

Key stakeholders and partnerships

- Bazalgette Tunnel Ltd (Tideway) – Project owner
- Allianz, Amber Infrastructure, Dalmore Capital, DIF – Project investors
- Jacobs – Programme manager
- Balfour Beatty, BAM Nutall and Morgan Sindall (West Section); Ferrovial Agroman and Laing O'Rourke (Central Section); and Costain, VICNI and Batchy Soletanche (East Section) – Main works contractors
- Amey – Systems integrator contractor
- Thames Water – Systems operator.

Timeline

- November 2012 – Market engagement commenced
- October 2013 – Announcement of shortlisted consortia bidding for construction contracts
- April 2014 – Tender of shortlisted contractors by Thames Water for construction contracts
- September 2014 – Development Consent received for the project
- August 2015 – Tideway appointed by Thames Water; project achieved financial close
- January 2016 – Commencement of pre-construction works by Tideway
- November 2018 – Commencement of tunnelling
- 2023 – Expected completion of tunnelling
- 2023–2025 – Commissioning
- 2025 – Construction due for completion.

Impact and results

Environmental, sustainability, and social impact: Tideway has conducted an initial social return on investment study, which concluded that for every EUR 1 spent on the project, there is a social benefit of EUR 3.8 through an improved natural environment, a rejuvenated river economy, and community investment that employs underrepresented groups.

The co-location of the project owner, its project management consultants, and delivery consortium members under the "alliance framework" created a unique culture that enabled the sharing of ideas and fostered delivery improvement. Co-location also led to effectively managing a divergent group of stakeholders to build consensus. In 2014, the project achieved a Development Consent Order (DCO) for approval for the TTT to be built through 14 London boroughs.

The collaborative approach, underpinned by commercial incentives, ensured the alignment of outcomes, leading to increased collaborative behaviours, such as main work contractors sharing knowledge to improve performance.

Early contractor involvement processes drove efficiencies and innovation into the design and construction phase of the project and reduced the risk of uncertainty for tenderers.

Due to long lead times, advanced design and power procurement for main sites occurred three years before the award of main contracts. A key success was the design integration through co-location and the removal of barriers through seamless integration of the project owner, its project management consultants, and delivery consortium members.

Future outlook and key lessons learnt

When **setting up the commercial model, the incentives need to create the right behaviours and sustain them over the life of the entire programme.** Key parts of this on the TTT project were the client being flexible and all parties evolving as lessons were learnt and the level of trust grew over the course of the programme.

A collaborative delivery team culture drives performance.

The target price derived from the EUR 96 estimate is significant to the ultimate efficiency of the TTT delivery. It is the foundation for the efficiency incentive and risk-sharing mechanisms. As a result, Tideway has strong incentives to deliver the TTT on time at the target price.

Sources:

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Glossary

Brownfield Refers to previously developed land that is not currently in use but may be redeveloped; often involves cleaning up environmental contaminants.

Capex Capital expenditures are the funds an organisation uses to acquire, upgrade, and maintain physical assets such as property, industrial buildings, or equipment.

Capital Provider An entity or individual that supplies the financial resources needed to fund a project or investment.

Commissioning The process of ensuring that all systems and components of a project are designed, installed, tested, and operated according to the project's requirements.

Common Good The benefit or interests of all community members, often emphasising shared resources or collective well-being.

Conceding Authority A public authority or government entity that grants a concession or contract to a private entity in a Public-Private Partnership (PPP).

Concessionaire A private entity that agrees with a conceding authority to finance, build, operate, and maintain a public infrastructure project or service.

Contractualisation The process of formalising agreements or partnerships through legally binding contracts.

Eco-footprint A measure of the environmental impact of a person, community, or project, expressed as the amount of land and water required to sustain resource consumption and waste production.

Feasible The degree to which a project or solution is achievable within given constraints, such as technical, financial, or regulatory.

Greenfield Refers to undeveloped land where a project is planned; typically requires new construction without existing infrastructure.

Multilateral Organisation An entity formed by three or more nations to work on issues relevant to all member countries, such as regarding development, trade, or environmental protection (e.g., the United Nations).

Nature-based Solutions Actions that protect, sustainably manage, and restore natural or modified ecosystems to address societal challenges, benefitting biodiversity and human well-being.

OPEX Operating expenditures; the ongoing costs for running a product, business, or system.

People-centric An approach or design philosophy prioritising people's needs, well-being, and experiences.

Permitting The process of obtaining legal authorisation or permits to carry out a project or activity, typically involving environmental, safety, and zoning regulations.

PPP (Public-Private Partnership) A collaborative agreement between public and private sectors to finance, build, and operate projects or services traditionally provided by the public sector.

Pre-commissioning Activities performed before commissioning to prepare equipment and systems for startup, including testing and inspections.

Profitability The ability of a project or business to generate financial gain or returns on investment.

Public interest The welfare or well-being of the general public, often serving as a guiding principle for public policies and projects.

SDG (Sustainable Development Goals) A set of 17 global goals established by the United Nations to address significant challenges like poverty, inequality, climate change, and environmental degradation by 2030.

Startup The phase during which a project or business begins its operations, typically after commissioning and pre-commissioning activities are complete.

Value for Money The optimal combination of cost, quality, and sustainability to achieve the desired outcomes from a project or investment.

Value for People The extent to which a project or initiative enhances individuals' and communities' well-being, equity, and quality of life.

Value for Planet The degree to which a project or initiative contributes to environmental sustainability and minimises ecological harm.

Viability The degree to which a project, plan, or solution can succeed under real-world conditions.

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