

**Environmental Audit Committee
Call for Evidence
The role of natural capital in the green economy**

**Response by the Worshipful Company of Water Conservators
Dr David Lloyd Owen
Chair of policy
22nd September 2023**

The Environmental Audit Committee is undertaking an inquiry into the current and potential future role of natural capital in the green economy, and the Government's proposals to increase private investment in measures to support nature recovery.

Response by the Worshipful Company of Water Conservators

This response is produced by the Worshipful Company of Water Conservators, the City of London Livery Company, focussed on the long-term health of our water resources and the broader environment. Our members include senior professionals from water, environmental and related industries and regulators, along with others who share our passion for water and the environment. Our experience and knowledge ranges from the complexities of environmental sciences, through the application of engineering to deliver the goals identified by those sciences, and the subsequent management of the assets created. The Company's purpose is *Promoting a diverse and sustainable environment*.

The replies are framed primarily with water and wastewater in mind, except where they have been drawn from personal experience in the City.

1. What potential contribution can private capital investment make to measures to secure nature recovery?

Innovation, particularly in monetising genuine net environmental / biodiversity gains through natural capital projects. Can net environmental / biodiversity gains be made into things that can be traded? This, by its nature would be an esoteric market, which is emerging in a number of schemes in the UK. The City has a reputation of attracting people with the necessary skills and knowledge into specialised roles such as this.

Many projects will be comparatively small in terms of what conventional financial markets deal with. This means they may need to create bundles of suitable projects that would collectively be able to attract external investment.

In terms of size, private investors range from Business Angels (private individuals) to Venture and Growth Capital funds (mainly for technology, as seen in Cleantech fund) to Project Finance (individual projects and collective funds) and Special Purpose Vehicles.

One particular challenge is that natural capital projects are of a slowly realising nature than conventional asset classes may be used to. So, they have to appeal to investors with a longer-term outlook.

In the longer run, special purpose vehicles (SPVs) may be conceivable platforms. To attract the necessary human capital to develop, manage and regulate these SPVs, projects or bundles of projects would have to be worth at least £100 million in realisable assets or monetised ecosystem services.

Green and Blue Bonds are emerging. They are, for example being issued for water utilities in England and Wales for funding projects such as wastewater treatment and sewerage. The attraction here can be in the higher debt rating and hence a lower coupon.

Demand management and other management tools to minimise over-abstraction of surface waters, along with aquifers where they feed habitats such as chalk streams. Reduction in abstraction through water reuse.

Indirectly, nature recovery depends on minimising the speed and extent of climate change. For the water sector, this means making the sector at least carbon neutral and to minimise water abstractions from rivers to retain their biodiversity.

It would be useful to consider the development of carbon trading to date, especially in the way that external events have driven the market and the valuations given to carbon credits.

2. How can investment best be aligned with environmental benefits, so as to achieve or surpass the Government's targets for nature recovery?

For water investments, it is crucial that they are carried out at the catchment basin level. Each catchment basin is unique, even if subtly so.

We have well established metrics for assessing ecosystem health. Thanks to the Water Framework Directive, we have a fairly explicit idea about what is going wrong and why. For inland waters, this is a case of aiming towards Good or indeed Excellent status under the EU Water Framework Directive. This does not primarily concern the chemical criteria, rather the aquatic communities we would expect to see in an inland water in its natural state.

Achieving this means limiting nutrient inflows to their natural levels, the effective elimination or minimisation of anthropogenic pollution and, restoring natural water flow regimens. In addition, modifications to rivers (dredging, straightening and so on) may need to be at least partially remediated.

When considering how to improve ecosystem health, it is necessary to first appreciate what the direct and indirect causes of biodiversity loss are.

The direct causes of biodiversity loss (in order of impact):

- Agricultural run-offs
- Emissions from sewage treatment works
- Pollutants from roads
- Industrial and landfill runoffs
- Combined sewer overflows

The indirect causes of biodiversity loss (in no order of impact):

- Degraded upland habitats
- Poor downstream farm habitat management
- Over-abstraction

The overarching aim has to be to reduce nutrient flows into inland waters. The second aim ought to be to reduce secondary pollution inflows along with minimising over abstraction.

The Government's position is to have real-time monitoring at 25% of England and Wales's CSOs by 2030. This would create a basis for starting to appreciate the actual flow of nutrients and their impacts, especially near the more problematic outflows.

This highlights the need to reduce nutrient flows from agricultural sources. This can only be effectively addressed at the catchment level. It also suggests exploring a "farm to fork" approach. We know that supermarkets are demanding increased intensification regardless of their consequences. Is there any scope for using these products to find a way of encouraging supermarkets to engage with their impacts on inland water quality?

This suggests projects aimed at a set of farms within a specific catchment basin. This approach is by its nature replicable across other catchment basins.

Maintaining upland habitat quality is a potentially most attractive approach. While definitions may be open to some elasticity, work in south-west England suggests that a ten-fold return on upland investments through the improved quality of downstream water, drought resilience and seasonal flood amelioration suggests that this is an attractive approach.

Sources of finance to reduce sewage and CSO flows may be seen by some to be contentious, as this is surely within water company remits. Even so, such projects do fall within the remit, if they can demonstrate a causal relationship

Yes, there is scope for finance products for directing funding here, especially when (post 2025) we start to be able to identify which outflows and overflows are in the need of the most focussed investment

The role of aqueous habitats in mitigating climate change also has to be considered. Sea grasses, peat bogs, reed beds and other habitats that play a profound role in absorbing CO₂.

The services provided for wastewater treatment and agricultural run-off minimisation are also significant. For example, recent work identifying the scale of methane emission reductions through lowering nutrient inputs into inland waters can be translated into trillions of pounds of net environmental gain annually.

In addition, consider the assessment of externalities costs and benefits as was done for the waste industry when it was looking at incinerators. One of the management companies wrote a report on this in the eighties. In addition, research was carried out in the early 90s which resulted in some publications on monetisation of the externalities of the effects on the environment and asset values of waste management practices. DEFRA also published a study on this in 2011.

It is also worthwhile considering the use of / reintroduction of useful old species like the beavers improving habitats, water quality and flood management as has been successfully implemented here in the West Country.

3. What measures are necessary to (a) establish and (b) maintain the high-integrity markets in ecosystem services which are expected to attract private investment? What confidence do investors currently have in the UK's arrangements for these markets?

The UK is well positioned in this regard due to the high standing that our capital markets are regarded internationally.

A trading platform will be required. The London Stock Exchange (LSE) has much to offer here. Given the niche nature of the proposed market, liquidity may be limited, even if just initially. It is likely that a platform designed for comparatively thinly traded financial products may be useful here, for example, the LSE's SEAQ platform for small capitalisation stocks. The LSE is held in good regard internationally as a trading platform developer and regulator.

The evolution of the carbon markets may be a useful introduction here. Both on the plus and the minus side. They have exhibited all the sides of human endeavour and behaviour. They also show how outside actors can have dramatic impacts on efforts to create orderly markets in instruments of his nature.

Other platforms, devised for commodities (the London Metals Exchange for example) and the London International Financial Futures Exchange (LIFFE, for financial derivatives) can also be considered. All these platforms are 'screen-based' rather than 'open outcry' which means there is a high degree of transparency about buy and sell prices and the amount of the specific instrument that participants are willing to trade at their quoted price. Again, the carbon credits market should also be looked at.

To quote the late Karen Bakker, water is an "uncooperative commodity." This reflects the reservations many (for right or wrong reasons) hold about putting a price to water along with an innate difficulty in attaching a value to the environmental services provided by water. Such reservations do not appear to apply for wastewater as a commodity.

Firstly, valuations for defined and individual ecosystem services need to be agreed and quantified. Next, this requires agreed-upon trading units. Again, definitions have to be firm.

For now, the most effective examples are where narrowly applied, such as reed-beds for minimising pollution loadings. These have a straightforward and demonstrable impact on river water ecosystem health.

The impact of improved upland habitats on improving downstream water quality can be measured in terms of reduced water treatment costs and improved water security and flood resilience. There is a growing body of research and field work on projects, for example in south west England.

At present, these valuation measures are typically of a provisional nature. Since 1997, many values for ecosystem services have been of a global nature, which overlooks different impacts of these services at the national level, let alone the catchment level. While valuations at the individual catchment level would be difficult to justify, catchment type valuations may well be a valid approach.

It is likely that valuations for specific ecosystem services will continue to evolve.

4. What contribution will data from the Natural Capital and Ecosystem Assessment (NCEA) programme make to the objective measurement of changes in environmental outcomes?

This could have a material impact. The role of citizen science to mitigate the current inability of the Environment Agency to monitor inland water quality due to understaffing may be a significant one. For this to be effective, it will depend on the adoption of common standards and protocols as highlighted by the NCEA.

This also highlights the importance of developing data analysis protocols at the earliest opportunity, given the potential for 'big data' to be generated as this data is gradually mixed with Met Office data and the roll-out of near / real-time water quality monitoring at 25% of England and Wales's CSOs (approximately 4,000) by 2030.

It may also be useful to consider the Taskforce on Nature-related Financial Disclosures recent report "Recommendations of the Taskforce on Nature-related Financial Disclosures" (TNFD, September 2023). Creating internationally accepted standards will be important when seeking to attract international investment.

5. How can the proposed UK Green Taxonomy support high-quality investments which deliver genuine benefits to nature? What financial disclosures should the taxonomy require?

It is encouraging to note that water has been given a higher profile in the 2023 UK Green Taxonomy than might have been anticipated. As seen by GTAG's analysis of the eligible components of UK companies under the 1st Climate Delegate Act of the EU taxonomy, water supply, sewerage and waste management account for approximately 5% of the total. (GTAG, 2023, Developing a UK taxonomy adapted to the UK's needs in the short and medium term: Scope, coverage and reporting considerations.)

"At CBD COP 15 in December 2022, the ISSB further announced that it would incorporate water, biodiversity and ecosystems into its development of future standards, drawing on the work of the Task Force for Nature-Related Financial Disclosures (TNFD) and other relevant initiatives." HMG Green Finance Strategy 2023, 2.2.3.39.

We have no comments to make on strictly financial metrics (turnover, opex and capex, etc). In terms of water quality and ecosystem health, metrics may be developed to evaluate:

Reduction in pollution (sewage) loading (this could be expressed in PE, or population equivalent)
Reduction of nutrient flows into inland waters (phosphate, nitrogen, etc)
Lowering of abstraction from sensitive waters (M³ per day)
Ecosystem health (there are well established measures for this for example, covering freshwater invertebrate diversity)

Indirect measures need to be developed to explore the potential for improving resilience to flood and drought, through for example, upland habitat restoration, natural dams, and improving the levels of organic matter retained in soils (regenerative and no-till farming).

6. How can the operation of natural capital markets ensure genuine net gains for nature? How do such markets address the risk of 'greenwashing' of investments and the offsetting of natural recovery in the UK against environmental degradation elsewhere?

ESG as currently used by companies and asset managers is not regarded as a reliable metric for considering ecosystem health. Most corporate ESG reports are generated by departments without appropriate qualifications in applied ecology, especially in the quantitative sense. Despite some useful work in the 1990s, the broad adoption of ESG as a part of the investment approach has seen it become increasingly qualitative in its nature and one associated with public and investor relations. There few (if any) rules for common environmental comparators as far as biodiversity maintenance and enhancement are concerned in terms of ESG reporting.

As a result, there needs to be a formal oversight mechanism. This is also discussed in the answers to questions 7 and 8.

This will be one of the costliest elements of the entire procedure. The only way of ensuring genuine environmental gains will be through physical inspections by suitably qualified people. This will be costly and time consuming.

In the longer term, some gains (or setbacks) will be able to be recorded on a quantitative and real-time basis once the roll-out of continual and remotely-enabled inland water quality monitoring starts at some point after 2025. This has a potentially transformative impact when it comes to being able to measure the impact of ecosystem services and the various initiatives which would be under development and deployed.

Perhaps it is a case of the pragmatists at, for example the LSE to work with environmental consultants to work out a system that ensures that net environmental gains are seen to be measured in an appropriate manner. There have been cases where environmental consultants have sought to assuage clients when realities were not what they sought them to see. An external layer of independent oversight may be needed to ensure confidence in the process.

External oversight matters. It is evident that the way ESG and other related approaches have been developed over the past three decades has made these approaches open to question. As a result, when developing an emerging market of this nature, it is necessary to demonstrate an activist

There also is a need to consider the training and recruitment of suitably qualified staff. At present, the principal current concern is that there is limited capacity for trained environmental consultants due to calls on them by major projects such as HS2.

7. What role can the UK's financial markets play in developing the flow of international capital into the development of the UK's natural capital?

This depends on the global capital markets' perception of the following:

- The good standing of the entities concerned
- The quality of the support services (legal, accounting, financial and environmental)
- Their ability to make compelling investment cases
- The quality of the after-markets that they can provide

It is up to the City to embrace this. Can they be persuaded to incline their hearts in this direction? It is not a sentimental place; it seeks realisable returns. The City is in theory wholly open to this as long as you can appeal to their existential motivations. The last few decades have demonstrated its raw ability to attract international capital towards a wide range of products. The City abhors a vacuum. If suitably advised and encouraged, it has the capacity and capability to embrace such a vacuum.

The institutional capabilities for supporting these capabilities are also in place. For, example, the Chartered Institute of Ecology and Environmental Management and the Chartered Institution of Water and Environmental Management. These entities and their members demonstrate the capacity which lies behind the more conventional financial institutions.

8. What role does the UK have in establishing international standards for natural capital investments, alongside other jurisdictions and financial centres?

The BSI works closely with the ISO in developing relevant standards. For example, they have developed a series of standards for treated wastewater reuse. One of the reasons for these standards being developed was with possible trading markets for various grades of reclaimed water emerging in the future.

Our capital markets offer a unique breadth and depth of experience as well as offering primary and secondary markets. This means they will be well placed to liaise with those seeking to set standards as they will appreciate how these can be best developed and applied.

In addition, a number of major environmental consulting firms and academic departments will be of importance because of their understandings about natural capital, nature-based solutions and ecosystem health. Potentially there will be roles for legal and accounting services for framing and verification.

Against this, we need to appreciate that since 2010, the Environment Agency has not had the staff resources required to adequately monitor inland and coastal water quality. This has undermined our international standing, especially in the light of hostile media coverage in recent years.

The potential for Europe-wide standards was profound, especially given the concentration of expertise amongst various European countries (France, Germany, Switzerland, the Netherlands and Scandinavia in particular) was an outstanding opportunity to make a global presence.