**Interviews**

The following are notes taken during the interviews, these are not transcripts, the information is further collected and refined through subsequent discussion with the organisations, refer the report for final information.

**Interview 1:**

**Section 1: Background information**

1. Owned by the IUCN UK National Committee, under which the IUCN UK code operates as a project. Governed by an executive board and advised by a technical advisory board. Administration of the Code carried out by code co-ordinator. Application and accreditation of projects to the code is currently undertaken by one appointed certification body- OF&G.
2. Public funding is involved in code development and associated research/science. Projects do not have to involve any public finance in terms of capital or revenue spend. But they will typically utilise public funds available and act to bring additional private finance to complement existing committed public funds for peatland restoration. Projects can be fully independent and private or leverage funding up to 85% of the project (15% had to be private to meet additionality requirements of the code).

1. Various contact points- either directly with the IUCN UK, via a project developer or broker or via an advisor such as peatland restoration officers. It depends on the farmer’s prior knowledge. Designed in a way to support the farmers, and lots of projects on the ground.
2. In theory this is negotiable depending on the type of project and likely investor relationship. Engagement with the code can, depending on the individual contract agreed, deliver: ongoing management payments for the duration of the project, additional funding to support the additional capital works, enable the project to happen e.g. provide additional funding support to enable a project which may not have ordinarily been funded through public finance routes.
3. Again negotiable depending on the nature of the contract and funding agreement with the buyer. May be that opportunity costs are wholly/partly covered, there may be an agreed annual/periodic management payment throughout the duration of the project (minimum 30 years).
4. Online registry of projects (potentially on an external host such as Markit in the future). Some GIS for project mapping and some project areas may have been surveyed using UAV/satellite imagery.
5. Currently only accounts for carbon – view to adding other aspects as science becomes available. Neglecting to account for the real value projects deliver beyond C can lead to a race to the bottom for C meaning that high quality and morecostly projects get costed out. Currently marketing other restoration benefits as additional CSR benefits.
6. Current barrier of 100% of capital finance available from government schemes is a barrier to bringing in private investment (does not meet additionality criteria)- need policy to change regarding eligibility for 100% of public finance to ensure that projects which are eligible for funding under the code and private finance are encouraged to engage with a blended finance model. Uncertainty over future agri-env payments means that landowners are currently reluctant to sign up to long term agreements (min 30 years).
7. See last two answers, these are important.

**Section 2: Social Distribution of Ecosystem services**

1. Not identified beyond direct involvement in the project (broker, cert body, land manager/owner and potentially a retailer or purchaser of the credits).
2. Scope for project specific negotiation on contract to accommodate needs of both buyer and seller. The wider benefits of restoration and ES have been assessed in the scientific community, but not specifically in the code [the scheme].
3. No.
4. No.
5. Projects are registered (quantify number of projects and stage they are at) and validated and verified to account for climate impact (conservative assessment). Beyond this, no.
6. n/a.

**Section 3: Economics/valuation**

1. Carbon- based on latest available government science. Structured into easily quantifiable and identifiable categories. It is only carbon at the moment.
2. Yes- but only in terms of the climate benefit (CO2e emissions reduction benefit over time). Price of this is then a balance between capital costs of the project, available finance from other sources, management costs and opportunity costs, needs of the buyer etc.
3. In most scenarios, the monetary valuation would be done by a broker. Initial estimates are made using project tools based on desk survey information. Field survey and independent valuation (through validation and verification) is then carried out before a project is live.
4. a) Yes- survey of land area, condition (informs climate benefit), risks to project, eligible land areas etc. The actual values of carbon are taken from pre-existing science. Standardised surveys rather than site specific surveys reduce costs.

b) LULUCF values being updated and included based on latest science.

1. Project specific- voluntary market does not have a set value. Value per tonne dependent on project duration, capital costs, management costs etc.
2. n/a

**Section 4: Legal issues**

1. There is no legal requirement- is part of a voluntary market. Contract drawn up between supplier and buyer forms a legal agreement.

1. Rules for additionality:
   1. Test One: Legal Compliance There shall be no legal requirement specifying that peatland within the project area must be restored.
   2. Test Two: Financial Feasibility Carbon finance shall be required to fund at least 15% of the project’s restoration and management costs over the project duration.
   3. Test Three: Economic Alternative Without carbon finance the project shall not be the most economically attractive option for that area of land, or shall not be economically viable on that land at all.
   4. Test Four: Barriers that prevent the implementation of the project (legal, practical, social, economic or environmental) shall have been overcome.
2. There is a legal contract in place.
3. Independent certification body and currently undergoing UKAS ISO14065 accreditation.
4. Duration minimum 30 years and has no maximum length- dictated by individual project agreement. Potential for extension beyond existing agreements at the end of the project.
5. Can be negotiated by the buyer if required but will likely bring an additional cost to the project to ensure that this is legally enforceable and that the agreement is monitored.

**Interview 2:**

Note: Not a scheme, but a model/platform that can be used by different schemes. The questionnaire was designed foremost to interview schemes some questions were not relevant but some answers are still of interest, especially where there is variability between systems that the platform facilitates.

**Section 1: Background Information**

1. Will vary on the schemes, systems and markets. The decision making process can be tailored for the different customers. The platform is user configurable, so can deal with any measure, any spatial prioritisation, any credit calculation methodology, etc.
2. In the development of the platform, none whatsoever.
3. Varies from scheme to scheme. There is often a phase of preparation which involves talking to the farmers and making them aware that a potential trade is going to occur, encouraging them to register on the platform online. There is a mapping portal within the platform, which allows the farmers to draw their field boundaries to create shapefile features to put into the auction. Once auctions open, activity is monitored, and farmers can reach out for help if needed. Farmers are able to see how competitive their bids are. The auctions are often not a pure reverse auction, but a uniformed price auction (or fund spreader auction), can be fairer and more practical.
4. These are variable and depend on the scheme.
5. It is a voluntary open marketplace, the farmers and buyers choose to participate.
6. They would be classified as a tool. Even without the platform, spatial targeting maps give the bids a weighting if required, lookup tables translate a measure in a location for a given spatial temporal configuration into an environmental gain, e.g. carbon credit. By building a platform so that those rules are built in, allows for the auction to proceed in a way that optimises cost per outcome, rather than a cost per measure.
7. Farmers need to know, so they know it is fair to them. There has to be fair auction rules (allowing farmers to know whether bids are competitive is useful), farmers also find it helpful to know how many environmental credits they are generating. Its business to business transactions, and farmers appreciate that and the transparency of the process.
8. It can be challenging to contact farmers initially, and generate awareness of auctions. Hence they need to run events and have on the ground networks, would be useful to have access to farmer data, though is difficult/impossible as a commercial entity. Currently targeting early adopters and innovators, but want to go more mainstream too. The more these marketplaces exist, the more mainstream they can become.
9. Aggregating buyers is difficult, and it will be interesting how this develops in the future in the marketplace.

**Section 2: Social Distribution of Ecosystem services**

1. This depends on what the client/scheme wants. The platform can easily attribute to different metrics of social justice (again if the client requires it), for example proximity to areas of deprivation or outing extra weighting from small farmers.
2. See previous answer.
3. No one has asked for it yet, but it is doable.
4. No, see previous answer.
5. Yes, the impact is measured, e.g. in terms of providing nitrogen certificates for regulatory compliance, or the water quality impacts over the nitrogen runoff or the phosphorus runoff. Typically, models are used, but they also do on site water quality monitoring as part of on ground verification of measures.
6. No.

**Section 3: Economics/valuation**

1. They measure direct units of pollutions in many cases, so there is not necessarily an ecosystem valuation required, its often a regulatory requirement and a need for compliance. For carbon, the system uses existing codes. For biodiversity they use a biodiversity metric to calculate. Client specific.
2. They trade in real things in principal. In regards to the theory of the valuation, they have been working with an organisation to build algorithms.
3. See previous answer.
4. a) and b) See previous answer. It is important to remember that typically not buying valuations, but buying physical changes.
5. The whole purpose of the platform is to find the price.
6. n/a.

**Section 4: Legal issues**

1. The platform is facilitating a contract with a buyer and a seller. At the heart of this there are several legal aspects; when farmers register, there is legal agreement how they will use the platform and behave and how the platform will behave with the farmers (transferring information, etc). As part of the scheme requirements, it will also specify that if bids are made, it is the farmers responsibility to ensure that they’ve got the legal framework for the approvals and compliance and the rights to do the things (measures) they are bidding to do. So there is a contract between the buyer and seller, that they will be bound by the requirements, specified in the handbook, but will also come into the final contract that is signed and stored on the platform that they have done all the things that are needed in order to establish the measures legally.
2. Yes. Especially when establishing regulatory compliance, e.g. habitats regs or Water Framework Directive. As part of the preparatory work before the farmers start bidding, they, or the client, may ask for baseline surveys, e.g. soil samples or photographs. Alongside that, the platform helps to facilitate the ongoing debate between the clients and regulators about what constitutes a valid way of measuring environmental gain. There are two baselines, the baseline of the condition of the field before measures are put in place and the regulatory baseline. But these regulatory baselines can shift, and once it becomes a legal requirement, it can’t be bought.
3. They are the platform, the contract is between buyer funding and seller. Straightforward contract, so then it comes down to how well you have drafted your contract whether it is legally enforceable or not.
4. n/a.
5. It depends on how the contract is set, whether there is maintenance costs, ongoing verification of measures are still in place and being maintained in the required condition, etc.
6. It would bring more buyers to the market if they felt they had a tool to show they bought something for the long-term. Conservation covenants can be a helpful tool. But the issue of permanence is a problem, and how to ensure that the environmental gains were enduring (e.g. using different land, if original lands are failing). Also in terms of climate change, habitats can shift. Maybe conservation covenants cannot deal with this yet.

*Other comments:*

Markets are at a fundamental risk, due to a lack of enforced regulatory baselines, as clients can be wary of paying for ‘extras’ when the ‘basics’ are not being met.

**Interview 3:**

**Section 1: Background information**

1. A couple of key actors early on in the scheme, who were influential in determining the shape of the first trade. In terms of control and inception in Cumbria, initially three actors then incrementally additional actors. The consortium developed and the actors within that, including the research consortium and then Environment Agency as a regulator. The unbalanced power structure becomes more balanced as the scheme develops.
2. Not in the first instance, doesn’t have a particular role until formally incorporated. Predominantly a business relationship.
3. In Cumbria, the farmer interacts through an aggregator that can group farmers, interpreting a need from the farmers and building up a proposition that works with the farmers. The balance of power is important. . Interaction will be conversations with the aggregator acting in a group.
4. Interacts with farmers and represents them in trades Collaborative in terms of developing a product and discussing what types of measures make sense to the farmers. Though they do not have a role in shaping what the demand is, as that is determined by what

the market.

1. The supply aggregator negotiates a deal with the demand side, and a contract is drawn up and the farmers have money distributed to them either for annual measures on an annual basis, or for capital measures paid upfront.
2. Works with a trading platform in Cumbria. Digitally useful to have a platform for transacting, useful to load up and have in a consistent format a service offering. But farmers/landowners collectively can also use put together a service proposition to the demands side, in this concept stipulating what they will do and where. Platforms allows auctions to take place, but auctions need to be aggregated via an aggregator. Careful to not be overly deterministic of what needs to be done on a farm, this requires a lot of dialogue with the farmers. Treating farmers fairly, like business to business trade, dynamics that are balanced. It is critical to change dynamics in the farming sector to avoid demoralising and disenfranchising farmer that will lead to suboptimal outcomes, as farmers may not personally invest in the product they are delivering.
3. Farmer engagement - getting the dynamics right is important, care to use intermediaries.
4. Takes a long time to build confidence in buyers that novel sets of solutions work, and their regulator has to be convinced that novel measures will work. It is not an unexpected challenge.
5. n/a

**Section 2: Social Distribution of Ecosystem services**

1. Subscribes to the underlying theory of change landscapes that have multiple value chains, creates a landscape that better serves regional business and society and thriving communities. So by driving a multifunctional landscape, it will be a landscape which reduces flooding, improves water quality, more accessible landscape that people can interact in, etc. This is driven identifying tangible business interests to get investment in order to derive multiple benefits for society. Landscapes are not in line with society's needs and there is a need to reshape the land economy so it best suits society’s needs (communities within that region).

The other take on it, is how to ensure that the trades evolve and proceed in a manner which does provide those benefits to society. The development pathway will include having a civil society chamber within the governance structure of the concept.

Social outcomes are inherent in the mechanism to change.

1. In the first instance it evaluates business interest through which businesses want to engage in a trade, based on demand. Also refer to previous answer, trying to drive multifunctionality on a basis of a series of multifunction landscapes driven by multiple interests will impact a wider range of needs of society.
2. This is also expressed by the businesses concerned, because they have an interest in regional societal benefit because it is useful for them.
3. when considering interventions in Cumbria, they would definitely favour ones that have wider potential benefits.
4. Not yet, but this partly due to the stage that these schemes are at, not starting to see the measures delivering impact yet.
5. Not the wider distribution of societal needs. The focus has been on whether they are delivering the things that the demand side players are paying specifically for. It is efficiency of resourcing.
6. They are aware delivering social benefits through market methods is controversial in theory. It requires governance and there needs to be a debate around it.

**Section 3. Economics/valuation**

1. There is a sequence of evaluations, it builds upon an understanding of businesses operation needs. Then building up an understanding of where those needs are put at risk from the environmental quality of the landscape. Services are built up from value that is assigned to them based on how material they are to the business to do what it needs to do. They identify business logic that links the business to aspects of the landscape around, and then the business works out how much that’s worth for them. Hence it is a price discovery that happens rather than a form of valuation in economic terms.

1. The valuation conducted by the demand side on their own varying estimate of how much it is worth to them. The other valuation is conducted by the supply side in terms of them working out cost base and therefore their absolute minimum base price. The concept has not carried out any theoretical evaluation.
2. Refer to the previous answer. Argues that this is where the ecosystem service field seems to have difficulties on valuation, as its been in a very theoretical economic realm and has not had much traction. In simple terms these are straightforward business transactions. Considering fungible ecosystem functions that start to attract a unit price, independent of the scheme itself, has the potential to shift things – then it becomes a matter of the price point determining where and if it is viable basically. The concept has not done this yet, they deal with bespoke situations, but within this framework in the future with potential buyers and match in more fungible commodified procurements.
3. a) There is data required, particularly around the phosphorus trading. The clients have to work on a baseline of knowledge of background levels in the environment and then need to determine how many kilos they need. There is an understanding of that type of data for the details of the actual trade. More so from a buyer knowing what they need, and the supplier side being able to determine and verify the supply. The framework would not have any measurements in the field, rather it is a just the trading environment.

b) Refer to above answer and back to previous answers around multi-functional landscapes.

1. Through negotiation, it’s been tendering process to broker an agreement with the demand side).
2. The key point about price discovery earlier the concept is very specific and differentiation themselves from theoretical valuation, this is an important distinction.

**Section 4: Legal issues**

1. They vary at the moment, and they are written up in an interim manner which is not the final versions. Regional entities will tidy a lot of this. In the first instance the basic model is that you have two/three demand side players, and they agree amongst themselves to procure a certain proportion of products and form a MOU in some form. Not usually a contract. And then they are contracting in parallel with the supplier and entering separately into a contract with the same supplier.

In Cumbria is the trade is underpinned by contracting with the supply aggregator and they will be paid for services that they coordinate from their farm. Ultimately there will then be a chain of contracts, multiple contracts between demand interests and demand aggregator, and one contract between demand aggregator and supplier aggregator, and finally contracts between their farmers.

1. This is really important. It varies depending on what they are looking at. Very often paying for implementation of measures as opposed to outcomes per se, given those measures on the basis of the modelled outcome. Often measures are not increasing the efficiency of their core business. A lot of the measures the farmers are paid for they would not do otherwise.
2. Right now, apart from contracts, it’s not stitched up in any formal basis. The concept acts as brokers (rather an intermediaries) in the first instance, so these relationships are held by the competent parties. That does not mean that there are not legal liabilities and obligations arising. Not quite there yet in the scheme, and that’s one of the reasons for creating governance structures, to be able to incorporate entities regionally that can take on these responsibilities. Its contract enforcement and not statutory obligations.

1. In the early trades, then measures are all managed through looking at the relatively simple small scale with auditing requirements from the differing outcomes and quite a lot of scrutiny from a regulator. As soon as they get to a more complex level where they are doing more value chains dealing with a wider range of demand, current arrangements will not be adequate. That’s where incorporating a vehicle to manage in a transparent way and having governance that enables management in a transparent way of trades that represents wider society needs and balances in an obviously equitable way the different needs of the demand and supply side players is absolutely critical.At this stage starting to construct these governance structures and incorporate those vehicles to do this.
2. In terms of provision of long term services, services that need to be bought for a long term will have to be contracted for a long term, one way or another. That is one level of ensuring longevity. Another level is having real markets for things that there is an ongoing need. And that can be provided through ongoing trade. It is expected that some trades will come, and some trades will go. So overall, a number of different trades will be happening, and there will be a dynamic list of trades at any one point in time. Longevity is having a system of transactions which drive stable land management outcomes. The particular suite and balance of those will shift over time. So the longevity comes from finding real service for real demand and therefore delivering real value.
3. Would not be welcomed universally. But would be welcomed in certain cases. There are certain types of interventions, especially ones involving big changes upfront where benefits for the demand side and the supply side demonstrably lock in, and therefore receive payments for that lock in through those long term arrangements or covenants. If you are a buyer or carbon or catchment protection, etc. you want assurance that what you buy will not be ploughed up in the following year. Being able to give that assurance to your customers is really important. So there are benefits, but they are not without their technical challenges. One of the key technical challenges to overcome, is that if any legal agreement, any contract, will only really stick in combination with the legal document that has been set up, having an ongoing commercial interest making it work. So there are potential risks of disproportionate covenant enforcement unless there is ongoing incentivisation to maintain the arrangement.

**Interview 4:**

**Section 1. Background information**

1. n/a
2. A private company that has been established to provide detailed biophysical landscape scale mapping. They have received some start-up funding although they are trying to integrate their offering into public/private funded research.
3. Currently they don’t- there are ambitions for this modelling to be taken up by Defra and a service developed by which farmers would pay a fee to use the modelling to help with farm management decision making and help identify what to do where on their land by integrating into farm management software.
4. n/a
5. n/a
6. n/a
7. Biophysical modelling has the potential to provide detailed input/output maps at catchment scale. This allows interventions to be selected that maximise impact on flooding, pollution and erosion. It ensures that activities are effective and it can integrate social distribution data to identify interventions that are of benefit at the wider catchment level. It provides more information than is possible with GPS, GPS is the default approach used. Although it can be challenging tpo get policy makers and regulators to recognise the benefits of this approach over and above current land management approaches. Modelling of this type has potential to improve decision making in AES.
8. Main challenge is educating people to move away from the reliance on GIS based modelling that does not provide the granularity to rank and prioritise interventions, maximising impact. The companies modelling is currently not able to provide data to estimate a % reduction in outcome, this is possible but requires more time and funding to develop. There is also potential to incorporate live weather data into modelling to estimate impacts to water flow in the catchment. This is necessary and missing from current flood modelling work. However, it is challenging persuading flood modellers of the need for this. Developing this is a long-term aim.
9. There is appetite for this approach to be integrated into Existing natural capital trading platforms, modelling has the potential to weight farmer bids, provide transparent information about why farmers get paid more for doing activities in certain areas and supports landscape scale collaboration.

**Section 2: Social Distribution of Ecosystem services**

1. Modelling at the landscape level supports better identification of those at risk and the benefactors of interventions. The model can support the integration of socio-demographic data. This tool does not evaluate the impacts on different ecosystem service recipients but if integrated with an AES can support this analysis.
2. n/a
3. n/a
4. n/a
5. n/a
6. n/a

**Section 3: Economics/valuation**

1. n/a
2. Provides the analysis, when integrated with AES schemes or interventions it supports the valuation of different interventions, and identifies where these will be of most benefit.
3. n/a
4. n/a

1. n/a

1. Not involved in the provision of a scheme rather provides landscape level data to support the identification of optimal positioning of interventions.

**Section 4. Legal issues**

1. This is not considered directly, however, it is a consideration by their partners and clients, typically use normal investment contracts. As this is usually based on a payment for results model the need for conservation covenants etc. It is not usually relevant but this could be a potential issue in the future, particularly in payment for land management models, requirement for careful monitoring and evaluation.
2. Incorporating modelling into AES would allow farmers/landowners to identify the benefits of interventions on their land. It can identify what would work where and enables a prioritised list of interventions for a given location. . Providing them with tangible information about which interventions work, should increase farmer buy-in and engagement.
3. n/a
4. n/a

1. n/a

1. n/a

1. n/a

**Section 5.**

n/a

Notes

Private company that develops biophysical models (hydrology and GPS) of the landscape that includes data on rainfall, climate etc. The landscape is divided into 5m grids and modelling is used to identify the water inputs and outputs, water flow accumulation pathways etc. The modelling explores changes to the land use and measures the difference that this makes within the catchment to 1) flooding, 2) diffuse pollution, 3) erosion. The model also has capacity to explore drought. Ranking each 5m square the modelling allows decisions to be made regarding what interventions to make where by ranking and prioritising interventions in terms of effectiveness. In future they are looking to expand this to include percentage reduction rates.

**Interview 5:**

**Section 1: Background information**

1. The scheme was co-developed itis an outcome focused scheme whereby consortia of paying for a particular outcome from a consortium of farmers and land managers. The scheme is in theoretically development, and makes suggestions about how this might work in practice. It is being tested in practically as part of the DEFRA test and trials programme. One suggestion is to establish natural infrastructure delivery companies which would be a company similar to a co-op with a board made up of representatives from both the supply and demand side and wider stakeholders also. The company would hold contracts for delivery, the beneficiaries would have a contract to deliver a certain outcome, the company would also procure from land managers/farmers to deliver against the outcome. In this scenario decisions regarding implementation would sit with the delivery company.
2. Suggested that there should be match funding available to kick-start the projects and ‘de-risk’ for farmers and businesses so that they are not shouldering the whole burden of the scheme. Currently testing within the test and trails project the potential to feed both public and private money through the concept.
3. Farmers and land managers would come together in consortium and develop a service offering that would provide an avoid cost for down-stream beneficiaries. Farmers and land managers are given a driving seat role in both developing and initiating the scheme. Research has suggested that this would be practically difficult, which is why the idea of a delivery company has subsequently been developed to broker and kick-start and bring people together.
4. Dependant on the requirements of business and the landscape, range of flood prevention measures from large catchment scape landscape change (i.e. re-routing of rivers) to on individual farm interventions such as tree planting, hedgerows etc.
5. Straightforward consortiums/consortia would make an agreement with beneficiaries for delivery *via* the delivery company. This could be either a bulk up front payment or a revenue payment over time or a combination of the two depending on the details of the scheme, but these are details that are being tested through the test and trial process.
6. Unclear what is needed here at present, depends on the complexity of the projects and the interactions between consortia and beneficiaries.
7. Lots of challenges- Two main challenges are 1) Designed around natural flood management, there are significant uncertainties around natural flood management effectiveness which makes it difficult for organisations looking for flood prevention certainties challenging to buy into. Without certainty they still have to invest in hard infrastructure as they are unable to rely on natural flood prevention measures. 2) supplier side challenges around self-organisation amongst farmers/landowners and willingness/ability to cooperate with others to offer joint services across a catchment. Willingness/ability to take on the risk of delivering flood prevention, for most farmers they do not have the financial capacity to take on risk, if for example a project does not deliver and they are required to provide compensation to a company if a flood risk measure was to fail.
8. Challenges above are those that are being addressed as part of the development and trail of The concept.
9. Scheme developed in 2015 at a time where there was not any expectation that there would be any significant changes in government policy. Consortia of suppliers is suggested as the mechanisms for how this is done, what this looks like and what type of arrangements they have is a issues that is being explored, it is likely that there will be significant diversity, this diversity is being explored in the models of how this might work depending on what is being delivered, i.e. what type of landscape and what type of farming is being undertaken. For this scheme, exploring collaboration approaches is essential as opposed to schemes where individual farmers are essentially in competition with one another.

**Section 2: Social Distribution of Ecosystem services**

1. Avoided cost model- beneficiaries are businesses and organisations downstream that will avoid a cost based on the land management practices that are implemented. In terms of practicalities of doing this requires a broker to establish where business interests are, publicly available information to help initiate where flooding issues are and approach based on this. In terms of needs of company’s/government organisations involved will negotiate how they share the cost of the scheme based on how much cost they have avoided.
2. Currently exploring weather public money can be channelled through the scheme and if so that public need is catered for through the market mechanism. The company will also have representatives as part of that entity to ensure what is being delivered is fitting into a wider local plan.
3. Underlying assumption that the schemes would have wider societal benefits. The assumption is that once a scheme is set up adding on activities that have wider benefits to society can be stacked on at a smaller cost that might be of value to other beneficiaries (i.e. community groups). As the scheme is trailed, the involvement and accountability to local beneficiaries beyond the transaction between companies and landowners/farmers will be important.
4. Not currently considered explicitly.
5. Natural flood management requires you to demonstrate that you are delivering a reduced risk of flooding. How this is measured or quantified has not yet been done. The consortia on both sides would be required to define how this was measured based on what the delivery claims were, how and where this was being delivered. is the scheme is not prescriptive in this.

**Section 3: Economics/valuation**

1. Avoided cost model- This is based on costs experienced down-stream, what real life costs are being experienced by businesses as a result of flooding and the absence of an ecosystem service that is preventing flooding and how much of this cost could be avoided by a natural flood management intervention and what it would cost to landowners/farmers to implement this. There should be a gap between this and this represents the trading space in which suppliers and demand side actors can trade and this is where negotiation can take place a price can be reached which satisfied both parties. From the business perspective the price will be lower than the cost that they are avoiding and from the farmer’s perspective it will be higher than the cost that they are incurring for delivering the scheme.
2. Buyers and sellers negotiate the price for service delivery this can be based on more or less information about what the value of the service they are providing is worth, for example the farming community could commission work exploring the value of what the service they are delivering is, although ultimately this price will not be pushed higher than the cost for the downstream business is regardless of the value that they attribute to the service that they are providing.
3. Two thought experiments around natural flood management and one around water quality using an imagined landscape have been developed to demonstrate the avoided cost model. The Eden test and trail project allows this to test this with real farms and real business costs which is running in 2020.
4. N/A
5. See section 1.
6. There are sensitivities around companies sharing their costs, some might be more or less open about this, this means that there will be some negotiations to be made around whether there is a viable scheme or not based on the information provided. It might be challenging to obtain actual cost data, although it is hoped that there will be enough interest to kick start the process, in the first instance to take part business are not required to share this information publicly, they will need to know the information themselves and vaguely communicate this to work out as a consortium what price they are willing to go up to and what contribution each company is willing and able to make to the scheme. How this process plays out will be tested in the paper pilot.

**Section 4: Legal issues**

1. The original idea was that there would be a direct contract between the consortium of suppliers and the consortium of buyers but evidence from engagement activities suggested that this was too rigid and simplistic for the type of scheme that they wanted to deliver. Because the scheme is about delivering ecosystem services over a long period of time and they are potentially quite complex, they need to be able to flex over time to accommodate for climate change, land use changes etc. so there needs to be some inbuilt flexibility including the option for parties to come in and out of the scheme over the duration of the scheme. On the other hand, there also needs to be certainty of delivery. Risk sharing is dependent on how payments are made. If the payment based on outcomes this sits with the farmers, if the payments are made based on measures then they sit with the buyers and neither are likely to work which is why the idea of a natural infrastructure delivery was developed. One way this might work is that the delivery company holds a contract with the beneficiary and then contracts to deliver against that with suppliers that may vary in length and allow for suppliers to swap in and out over the years. Alternatively, there could be direct contracts with the buyers and suppliers but brokered through the delivery company. Probable that this will be different for different schemes in different places, a learning is to build the legal structure around the relationships that emerge as these schemes are set up as opposed to building a rigid legal structure and attempting to fit all the players into this.
2. Avoids this by trying to make agreements for outcomes, in which case as long as the outcome is being delivered the organisation shouldn’t really care if this a farmer doing something new or continuing to do something that they were already doing. This relies on a high regulatory baseline that is enforced. Businesses don’t want to be paying a farmer/landowner to do something that they should be doing anyway. Underlying assumption that the outcome wasn’t being delivered or is going to be delivered. Challenges with ELMs complicates things in that from a business perspective there is uncertainty whether things might begin to be delivered *via* public payments. This might have a chilling effect on business investment. This is related to additionally.
3. In theory they should be but in what format is unclear, there will be some learning by doing. In the original plan the delivery risk was placed on farmers and if there was a failure to deliver suppliers would be required to compensate buyers. This maybe ambitious, and a more cooperative approach rather than legal tick box approach will deliver results where both sides have a genuine interest in meeting the outcomes rather than just delivering the terms of the contract is important, although legal certainty is necessary. This will depend on who is involved and what is being paid for.
4. In the process of developing and testing this. A third party might be used to conduct monitoring but the delivery company would hold the responsibility for ensuring this is done but contract this out.
5. Does not go beyond the agreement made. It could be carried on if a conservation covenant was built into the original agreement, although not how the scheme had been envisioned, but if the supplier consortium is willing to agree to implement the measure over a given period and maintain them over an additional period, but would only work if the measures did not require much maintenance and did not affect the ongoing core business of the farm.
6. Could be considered but would depend on the intervention.

**Section 5.**

**Interview 6:**

**Section 1: Background Information**

1. The governance is undertaken by two groups the executive board and the advisory committee. The executive committee manages the day to day running of the scheme. The advisory board is composed of external people from carbon, climate, academic and forestry communities who advise on the development of the code. Ideas are put to this board prior to any changes being made to the scheme. Initially a public consultation was held when developing the code, this has been updated a few times however, only minor tweaks not major changes. If in the future major changes (e.g. changes to methodology or widening of the scope) are made, then they would go out to public consultation again for wider open.
2. Public funding supports the running and management of the scheme but there is no public funding going into the projects directly from the code. There was funding for initial research.
3. For landowners there is an online registry, you need an account set up and you need to register your project within the system, then there is a process of producing supporting documentation on the project which is validated, this is then regularly checked over time to monitor the progress over time by a third party (verification). This is recorded in the registry, which is a transparent registry of who owns what carbon, what carbon is available for sale, who has bought carbon and at any point in time. There are two bodies validated by UCAS to validate and verify projects.
4. Farmers/landowners define their own projects with or without the assistance of project developers. Carbon listed for sale on the registry for corporates to purchase.
5. When projects are validated an assessment is made regarding the carbon sequestration of the project and the majority of the projects sell their carbon upfront or within the first few years of planting. The price varies, although the price that corporates are willing to pay is somewhere between £5-£15 per tonne of CO2.The prices are increasing both at the lower and upper ends because of increased demand and interest in offsetting emission and investing in natural capital solutions. When selling upfront landowners need to ensure that they include capital to perform monitoring and evaluation over time. Project developers help landowners to manage this process differently, some project managers take on this responsibility and landowners receive a lower price for carbon, others land owners maintain this responsibility.
6. Trying to develop a network of project developers across the country that can help landowners so that there are pools of expertise around the country. The online registry is just the platform to show everything on, as the standards body, they try to provide as much information as they can, which is easier to do directly to agents rather than every land owner, although they have run some land owner events also. After initial validation, verifications are desk based exercises provided that the forestry commission has visited the site as part of the initial project proposal. Subsequent validation is a risk based approach to ascertain if a site visit is required, this depends on the track record of the project developer and whether it was doing well at the last verification stage. There is not currently a technology platform for this process, other than the online registry.
7. There have been plenty of challenges, the main challenges currently are ensuring that the scheme is cost effective and making it simple enough for landowners to understand and take part easily but also robust enough that the code meets the carbon standard globally. Making permanent changes to a landscape can be a challenge to engagement.
8. Challenge is aiming to simplify the process whilst maintaining rigor. In the future the aim is to develop a self-assessment verification process as a way of cutting costs, the land owner would be able to self-certify that the project was doing ok. A condition of self-verification would be that the units are not converted to actual units until they know that from the registry things are looking ok. If carbon has been sold upfront and the buyers are less worried about the exact amount that they are purchasing and are more interested in investing in a project for the future and it is doing ok, for those types of project self-verification would be enough. Although currently trying to establish what the limit for self-verification should be. Aims also to improve the ‘look-up table’ and potential to increase the scope of the scheme beyond woodland creation to the management of trees in other situations more broadly. This is contingent on time/capacity to ensure that the existing methodology is robust before attempting to widen the scope of the code.
9. Difficulties are linked to the challenges outlined above. Specific difficulties related to the establishment of the CO2 registry, establishment of which has been fundamental to acceptance globally. Barrier- acceptance of the scheme, in terms of how it relates to national level accounting for GHG emissions, how other countries perceive a domestic scheme and whether or not people are willing to purchase from a scheme until it is accepted, in the last year the scheme has been endorsed by ICROA and their acceptance is key in many of the market players willingness to buy carbon credits from the standard, which has been critical in making the market function and having buyer acceptance of the scheme.
10. Awareness that the scheme operates against a backdrop of wider global standards and in terms of context the scheme is domestic, UK based, compensating for UK based emissions. Intentionally trying to keep everything in the UK so that there are no issues about international trading of units and offsets generated in the UK being accounted for by other countries GHG emissions. Buyers must therefore have operations in the UK, although this is not a barrier to operation at present as there are plenty of UK based companies that are interested in and the programme and the code is not able to keep up with their demand at present. First standard/scheme to be developed in Europe, methodology was therefore based on international standards some are being implemented and principles have been used from others, and what is used in the UK, countryside legislation etc., have been incorporated. In this sense the code is comparable to global standards but applied directly to the UK situation.

**Section 2: Social Distribution of Ecosystem services**

1. Requirement for consultation with local communities, and the scheme must comply with the UK standard that sets out minimum expectations for a variety of criteria, projects do not have to do more than meet these existing requirements. If they want to do more they can demonstrate what more has been done which may help sell more carbon but this is not monitored. A benefit score shows how well projects are doing in terms of community engagement, water, biodiversity and economy but this is not a monitoring requirement. Mainly because when the scheme was established it was cost effective to monitor carbon directly but not the wider benefits of the project. As the scheme develops there may be a requirement to monitor these additional benefits if it means carbon is able to be sold for a higher price.

1. See above. Individual project assessors may have a way of verifying the buyers and identify who they are willing to work with. Not aware of a process for evaluating buyers in terms of their commitments to carbon reduction before they purchase offsets, although a number of project developers do risk asses involvement with different companies.
2. At a higher level an evaluation of the scheme as a whole has been conducted to evaluate the benefits of the wider scheme, including evaluation of issues such as how many projects provide access to areas of social deprivation, although this is not conducted at an individual project level. Most projects ensure they meet the UK standard and they want to show how well they are doing in social and environmental areas, and therefore they may do some assessment of that anyway. The scheme is agnostic about where projects are located in the UK, provided that projects are meeting the UK standard as they have strategized around locations and where this is wanted/needed. New projects should fit into that system and grant schemes are tailored to encourage people to plan in certain areas in line with these priorities.
3. See above.
4. n/a
5. The UK standard sets out what is accepted and the code aligns with this. This standard is not in place for other types of interventions within the landscape in terms of wider sustainable management.

**Section 3: Economics/valuation**

1. See section 1. The code has not placed a value on Co2 units rather they have provided the infrastructure for sale of units and the price is determined between the buyer and seller. This is done on a one to one basis and willingness to pay and demand led.
2. N/A although the code has evaluated the wider benefits of the scheme via economic analysis.
3. Economic valuation conducted by FTEC.
4. See report for methods.
5. See above.
6. N/A

**Section 4: Legal issues**

1. There is no legal requirement to buy or take part in the code, this is a voluntary scheme. The land owner is required to sign a commitment statement that requires them to pledge that they understand the requirements of the code and their commitments. There is no covenant on the land if it is bought or sold- considered off-putting and to reduce engagement. Currently the landowners sign the commitment statement and that is the agreement for being a part of the scheme. Legal issues are under review and although they it is not stipulated some project developers do have a covenant in place, so although not a requirement of the scheme some will have chosen to do this to demonstrate that the land is part of the scheme. This has been done in different ways, a learning point for the scheme is to review how this has been done across the scheme and establish what would be most effective if this was to be introduced across the scheme. Permanence is assumed as a licence must be applied for removal. This provides an additional layer of protection.
2. Various tests for additionally. Legal test, cannot be compensatory planting for something that has been felled elsewhere. Two, financial tests, one the proportion of carbon finance that comes into the project, it must be at least 15% of the planting and establishment costs, proxy to say that the carbon finance needs to be a significant proportion of the finance of the whole project. Viability/investment test, if the project is making money without carbon finance then it is not considered additional, you have to show that it is not financially viable without the additional funding. Barrier test, if the financial is not satisfied, if projects are able to show that significant barriers have been overcome to enable a project to go ahead that’s an alternative but not often used.
3. Contract in place and if this is not delivered on then the farmer/landowner is in breach of contract.
4. Aim to be transparent in that all information relating to projects, tonne of carbon is visible on the registry website, it is possible to see who owns what at any point in time, you can also see who has done what monitoring and what monitoring was conducted and the locations of the projects. Methods are constantly evaluated, they have developed the best methodology that they can based on the what forestry research has provided, but is updated with new evidence as it emerges. Disputes committee, if any projects are aggrieved by any decisions made they are able to put complaints to the disputes committee, this is a formal process for review.
5. Implicit in what the landowners/farmers sign up to is that once a certain amount of carbon is stored this is maintained indefinitely. Inherent in the scheme is that the land use change is permanent See regulatory mechanisms for ensuring this above.
6. This is not in place as it was considered to be off-putting and might impact engagement with the scheme. This is something that could be reviewed if it was felt that it was not too onerous and it could be enforced for all.
7. All the interest in climate emergency has meant that this arena changing rapidly and the interest from sellers and buyers has increased significantly. Currently looking internally at capacity to meet demand.

**Section 5.**