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| Meeting Title: | CamEO Engagement Forum – Natural Capital Assessment |
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| Location: | Cambridge University, Seminar Room, Department of Geography, Downing Place Cambridge CB2 3EN |
| Meeting Date: | 28 June 2017 | Time: (From) | 09:30 | Time: (To) | 13:30 |
| Attendees: | Barry Bendall (BB) Rivers Trust (Chair), Martin Bowes (MB) Anglian Water, Chris Gerrard (CG) Anglian Water, Geoff Brighty (GB) Environmental Sustainability Associates, Peter Landshoff (PL) Cam Catchment Partnership, Jim Stephens (JS) & Andrew Hinchley (AH) River Lark Catchment Partnership, Martin Baker (MaB) BCN Wildlife Trust, Nigel Simpson (NS) Natural England Guests: Andrew Holland (AHo) RSPB, Clement Feger (CF) Cambridge Uni, Peter Easton (PE) Coca Cola, Karen Ellis (KE) WWF, Jo Morris (JM) Cranfield University, Guests from Vivid Economics (VE) Helen Dunn, Ulrike Hotopp, Robin Smale  |
| Apologies: | Ed Braham-Jones, Rob Wise , Rob Clapham and Ruth Hawksley |
| Distribution:(Those Present +) | As above. |
| Purpose of Meeting: | **CamEO Engagement Forum and workshop with Vivid Economics.** |
| Agenda: |

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|  | Introductions and welcome - Karen Ellis WWF |
|  | Objectives of this workshop – Ulrike Hotopp, Vivid Economics |
|  | Natural capital accounting – a brief introduction – Robin Smale, Vivid Economics |
|  | Natural capital in the Cam & Ely Ouse – Robin Smale, Vivid Economics |
|  | Natural assets/ecosystems and ecosystem service flows: emerging results – Helen Dunn, Vivid Economics |
|  | Pressures and risks – Robin Smale/Ulrike Hotopp |
|  | Who impacts on natural capital and how? - Robin Smale/Ulrike Hotopp |
|  | A brief introduction to further research – Clement Feger |
|  | Discussion |
|  | Conclusion and next steps – Robin Smale  |

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| **Natural Capital in CamEO** **(list of representatives from outside of the catchment)** |
| * Karen Ellis WWF (lead on the project)
* Joe Morris (Cranfield - soils and agriculture)
* Helen Dunn (Vivid and AW) - ex DEFRA natural capital lead
* Ulrike Hotopp (Vivid) - ex DEFRA policy developer
* Robin Smale (Vivid) - long term member of the natural capital committee (land use group)
* Clement Feger - Cambridge Uni PhD
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| **Objectives** |
| * To provide a broad and common understanding of the approach; Show the extent and relevance of natural capital in CamEO; How we can use the information.
* The aim is to prove the concept of using spatial data to create a natural capital account.
* Identification of further work and needs in the catchment

Carbon, flood, food, water purification, raw provisions, recreation. |

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| **CamEO overview** |
| Karen Ellis from WWF gave an overview of the CamEO project so far, highlighting the aims to support water sensitive farming along with Coca Cola, engaging with government and partners for natural capital and influencing policy. The work includes a need to understand the ‘environmental provisions’ in natural and economic terms along with their role in decision making. There needs to be a value in nature and this in turn under pins the economy. WWF is supportive of Natural Capital and its place in policy circles both in the UK and world wide is growing. The UK government is currently in the process of setting up a Natural Capital body. This will be part of the Natural Capital commitment in the next 25 year environment plan with the need for further investment in the environment. Part of the plan is a set of pioneer projects pilot testing Natural Capital at a local level with the aim of understanding how you can use a Natural Capital approach to influence investment planning that brings environmental benefits. With Brexit there will need to be a rethink of policies which presents an enormous opportunity for Natural Capital to show the benefits in economic terms both in the UK and beyond.  |

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| **Natural Capital Workshop (Accounting) – Robin Smale Vivid Economics** |
| Robin Smale from Vivid Economics introduced the purpose of the workshop – to provide a better understanding of Natural Capital and its economic challenges with discussions. The Key slide points were:* An introduction to Natural Capital accounting, land use and ecosystems, and how this can be used going forward in the CamEO catchment.
* Phase 1 to provide a high level picture of the natural assets in the CamEO catchment with aims to achieve comprehensive accounting with outcomes evidence based.
* Scope needs to include consideration on flood defence, food production, water purification services, Recreation.
* Accounts need to be set out as professional accountants would do so this reflects the true costs. Not all figures are natural transactions but has mixture of financial and other numeric transactions that don’t happen, including services people benefit from. There needs to be an estimate if a transaction had occurred what is the financial equivalent. Therefore this is reflected correctly on the balance sheet for the CamEO project. The set of numbers can be then used to better understand what is important and define what metrics are tracked. This can then enable investment decisions to be influenced by the numbers. Operational activities and assets need to be also taken into account in order to maintain the quality of services provided. This demonstrates the beneficiaries of Natural Capital and puts the emphasis on them to invest in Natural Capital protection.
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| **Natural Capital Workshop (Natural Capital in CamEO) – Ulrike Hotopp Vivid Economics** |
| Ulrike Hotopp shared with the group the slides around Natural Capital in CamEO.The main points highlighted were:* The CamEO area currently has 64.6% of its land area producing crops for arable farmers with a large 70% being made up with the growth of cereals followed by 11% horticulture, 11% sugar beet, 4% potatoes
* This data can help understand the environment and the CamEO catchment land use. Maps can be used to visualise the distribution of Natural Capital. For example, in the CamEO catchment woodland and cereal production show significant coverage.
* Flood risk priority is along the main rivers and the majority of the south level - highest flood risk is downstream of the rivers and woodland. You can then start inferring how changes to natural capital might affect this.
* The highest flood risk is downstream of the rivers and woodland. Once the flood risk has been determined then this can feed into inferring how changes to natural capital might affect this.
* The values and annual value of recreation assets in the CamEO catchment also needs to be considered. This is calculated using the number of visitors to the area, as well as proximity of tourist attractions to urban populations. Thetford Forest in the catchment attracts 1.5 million visitors annually with this expected to rise. The current value of recreation in the CamEO catchment currently stands at £35 million from visitors with a total annual value of £135.
* Water abstraction and the value of water needs to also be taken into account. Data from the EA is available. The important factor above all is understanding the value of water abstraction - if not available where would the water have to come from. Exploration of change scenarios and the value is essential in this process for Natural Capital.
* The cost of losing abstraction rights needs to be factored in. Along with seasonality which is needed to be taken into account and to also include what is returned to the environment through sewage.

**Comments from the room :*** In the next 14years the number of people around Cambridge is doubling – this will put pressures on the water. What needs to be asked is- will the value of this always be the same or will the value of drinking water increase with increasing populations?
* Principal of valuation and the need to look at lowest value of replacing water or the total loss of water – i.e. how would it impede the growth of Cambridge. So far this doesn’t include agricultural abstraction but when it does the value will be derived from the loss of earning if the water isn’t available.
* Climate regulating services (carbon sequestration) this includes Woodland which in the CamEO catchment is the highest value for this (broadleaf and conifer) with Farmland second and Grassland third . Figures so far do not yet include soil and organic matter or the role of biofuels
* While this doesn’t help make decisions it does help to understand where changes may be needed. Services around cropped land and woodlands producing goods at over 50 million a year. This highlights the need to isolate the contribution of the natural assets and also looking to take out subsidies which can lead to negative resourced rents. It may help to think of sustainable alternatives. Natural Capital assets deliver more than £100 million in benefits to the CamEO catchment.
* Phase 2 can look at water treatment costs. And lead to reduction in costs and the wider environment.
* Biodiversity areas on the accounts are challenging to asses, but remains important as it under pins all the assets e.g. SSSIs. The cost of replacement and restoration as a proxy for biodiversity value is a possibility.
* Q: Have health benefits been taken into consideration as this is service? This would include access to good quality green space with not just the health benefits but mental well being.

A: Psychical health is around exercise taken and not research on quality and the outdoor door space. It also doesn’t have any value with bio diversity. There is no evidence between the quality of outdoor space and exercise taken. There are issues around estimate errors but can produce range of plausible issues as error reporting is tricky, however, Vivid will be giving a range on the costs to try and incorporate this. The project needs to be explicit on what is included and what isn't.* In the CamEO Catchment there needs to be a way to manage and improve biodiversity. There is also the need to know what is broad and narrow and what the balance is to provide a comparison. e.g. we need more woodland, how can we do it and maximise the benefit to biodiversity?
* All decision making needs to be supported as it will be challenged by government. So figures need to be robust. Liability can be used if targets are not met to look at cost effectiveness for example around the Water Framework Directive (WFD)
* This assessment doesn't include Natural Capital in urban settlements (e.g. air quality, green spaces). Biodiversity values are low in these areas. However this still needs to be looked at to understand the spatial arrangement of biodiversity in CamEO. We can achieve CamEO’s objectives in cost effective ways and achieve better biodiversity. There needs to be a balance. All CamEO partners need to make the right tactical decisions.
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| **Natural Capital Workshop Soil Degradation - Jo Morris Cranfield University** |
| * The outcome of this is to achieve water and soil sensitive farming while providing services to farmers that allow them to protect the soils Natural Capital. It is really important to pull out the major parts of Natural Capital and look at inherent properties of soil, fuel and water and also livestock. The key things for Natural Capital need to be defined and what part they have in the CamEO.
* Water sensitive farming should be achieved in the future and land managers not farmers need to deliver this. Land managers use soils and soil degradation has knock-on effects. And need to look at land use (funded by DEFRA). Diffuse contamination and soil ceilings, carbon loss.
* Land use overlays with soil uses and degradation and erosion risk.
* Costs both on farm and off farm must be considered with the need for farmers to substitute with fertilisers. There needs to be understanding on the loss of soil fertility and consequent fertiliser application. Pressure needs to be put on farmers to keep water in the landscape. The information that can be given to farmers on how they are impacting their long-term farm health is valuable.
* Only 15-16% of the peat in the fens remains and this is likely to only last 30-40 if nothing changes. Issues on carbon losses and stocks of carbon in the soil profile and loss with different land uses and estimates of loss - financial. This is not just the UK. Estimated costs of carbon loss from peat soils which are expected to only have 30-50 years of life. This is costed based on standard government models for carbon loss.
* For erosion - £25-50 per ha (higher on peat soils) - this still need to be fine-tuned.
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| **Natural Capital Workshop (Discussion Points) – All Attendees** |
| **Things to consider:*** Does the Natural Capital approach refine the position in the catchment?
* Can this be achieved? What are the risks to the nat cap in the catchment?
* What are the big wins?
* What could be the loses?
* What further information can help develop the next steps?
* What can this feed into and inform?
* Historical trends, risk register, funding analysis?
* Possible interventions highest and lowest?
* Uncertainty?
* Decision making.
* What scenarios?
* What are the main ways? Look at a more micro level in the catchment? Or look at certain assets? e.g. farmland?
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| **Natural Capital Workshop (Discussion and comments) – All Attendees** |
| * This raises potential value in how society views the river environment both historical and now. And the value it puts on this. A Break down to sub catchment level would be of benefit.
* We need to get to a point where we have specific timescales and a sense of urgency.
* The suggested view needs be ideally for a 25 year period, so this can be broken down to separate 5 year action periods, to allow for business planning for the key tipping points. This allows for looking at trends, and what CamEO wants to achieve and be ambitious, while looking at the provision of other services that can protect against negative trends to natural capital.
* PL asked that the report be used to highlight calls to action on specific issues (such as peat loss) with concrete economics behind this. There is a need to include all the soils and key issues in the water environment. This makes business sense for the individual and society.
* The area also has contract farming and pressures from supply chain on yields.
* CG commented that the lack of peat would not stop farmers growing and there needs to be a way to get a buy in. CamEO needs to understand the issues and how they feature in a farmers account monetary wise. The economics will need to be converted with those interested parties so they understand the value and the mechanisms needed to see the benefit of Natural Capital.

JM reminded all that Brexit will have an influence on future farming practice. There will be a big change and an opportunity for people to think long and hard on this. The agricultural sector in parts is less dependent on DEFRA/ EU hand outs.* If any subsidy budget in the CamEO catchment continues where will it be spent? KE suggested that maybe can we look at different routes for farmers. Maybe highlighting what stakeholders may pay for.
* In terms of flood risk, PL expressed concern that there needed to be care around any calculation. Previous experience with stakeholders was highly complicated and being viewed as having no biodiversity benefits. CG suggested that the Environment Agency have a big role in this.
* CG commented that with multiple people engaged in work in different parts of CamEO, there is a need to look at how we undertake this work. CamEO partners need a CamEO set of actions. NS also commented that CamEO needs to get to the point where there is a local decision point.
* CF recommended the following guidance: Once you've explored the types of actions that can be delivered for natural capital, who then commits to these actions? Look at different scales and catchment scales. Once you explore Natural Capital issues and look at tacking issues, who commits to the actions and the results of these? Who contributes to this? This is for on going discussions and long term governance. Which organisation delivers/does it create value? That are both positives and negatives, but how can these be negotiated? How can you use economic information to assess progress? Who contributes to this progress? Comparing the efforts that individuals put into natural capital vs. the benefits that they directly receive. How can we negotiate the efforts that various stakeholders put into natural capital protection?
* Clement would like to have bilateral discussions with any partners that are interested in discussing these points. If there is any interest on this, please contact [mbowes@anglianwater.co.uk](file:///%5C%5CGlobalinfra.net%5Cusers_G-O-netapp%5Cusers_G-O-netapp%5Cshilton%5CMy%20Documents%5Cmbowes%40anglianwater.co.uk)
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| **Natural Capital Workshop Closing Comments** |
| KE WWF *“Thanks for discussion and hearing the views on this learning journey. Any feedback please send via Barry Bendall, and report will be out in July and then we look at next steps in this ongoing journey.”*CG Anglian Water- *“…from Anglian Water thanks and this project will give food for thought. There are lots of current thinking on Natural Capital and it will be good to see how this project can be developed and soil seems to be a big priority for the future”*PE Coca Cola- *“…(The) Coca Cola Replenishment Program is to replenish the water it takes out for the drinks etc…”. “…Interest here is investing this much money and Natural Capital has helped generate a benefit. It is hard to find good case studies as these need to be carried out.”* BB- “…*reflect on why we are here, the CamEO Catchment partnership and catalyst for Natural Capital. Up to now the catchment has been the pilot that will on go so far in delivering Natural Capital and need to find the value locally for discussions and we are at a cross point and what is the appetite now on taking it forward? Are we prepared to look at local elements?”* |