

Workshop Report
Approaches to Integrated Catchment Management:
Learning from International Experiences
30th November 2010

Follow-up to the conference on 29th November 2010 on:
Catchment Management for Protection of Water Resources
Rural Economy and Land Use Programme Project
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Workshop on Approaches to Integrated Catchment Management: Learning from International Experiences

30th November 2010, Holiday Inn London Bloomsbury

Objective

To explore ways in which participative, adaptive and knowledge-based approaches for Integrated Catchment Management could be developed and trialled in the UK.

The workshop will:

- Explore ways of applying an approach to managing land at the catchment scale which balances between the competing demands of a range of stakeholders;
- Distil learning from approaches to river catchment management that have been applied in UK, German, Danish, Dutch, US and Australian schemes;
- Scope approaches to Integrated Catchment Management that could be applied in the UK;
- Explore approaches to governance and stakeholder engagement to trial in the Demonstration Test Catchments (e.g. to help prioritise the application of measures); and
- Scope options for piloting further development of existing catchment management initiatives e.g. SW, Broads, Somerset.

Agenda

- 9:30: Introduction – The current England/Wales position and where we need to get to (Defra/EA).
- 9:45: Drawing on the RELU project and previous day's conference and the draft DTC Vision for catchment management
- 10:05-13:00: Items for discussion (drawing on international experiences)
- i. The principles of an integrated approach to catchment management
 - ii. What could we adopt easily/quickly in the UK?
 - what scope and structures at local, catchment and national scales do we need?
 - what should the interaction between national government, agencies and catchment groups (vertical coordination) and local collaboration at catchment level (horizontal coordination) be? – examples from other countries
 - iii. Mechanisms for facilitating decision-making at a local level
 - iv. Concerns about legitimacy, accountability and capacity at local level
 - v. Ways of winning over farmers and other communities- How to incentivise good land management and other good practice
- 13:00: Close

Summary

This summarises key points discussed at the workshop. A near verbatim transcript follows on pages 5-23.

The workshop followed the end of project conference presented by the RELU funded 'Catchment Management for Protection of Water Resources' project on 29th November 2010. It aimed to be informal and to provide time for discussion, exploring a joint agenda with Defra and the Demonstration Test Catchment programme. It was held under the 'Chatham House Rule' and thus comments are not attributed and there is no list of attendees.

The scope and structures needed at local, catchment and national scales

There was generally consensus that:

- current arrangements are a long way from what is needed
- local authorities and stakeholders are not sufficiently involved
- an adaptive management approach is needed
- drivers, decision making levels and funding need to be clarified
- greater coordination and coherence in action is needed
- bridging organisations and people are needed
- management should be decentralised to the lowest appropriate level
- a common catchment or bioregional plan is needed – catchments and river basins are the right scale to work at
- continuity of programmes and personnel at the local/catchment level is important
- national level environmental targets and standards are important, but at local level there must be scope to genuinely take account of community values and priorities
- public education, awareness raising and engagement is essential
- getting people on board and developing a shared vision is a necessary starting point
- catchment management should be integrated, it should integrate flood risk management, water quality and water resources
- there can be a diversity of models for catchment management, with variation to match local conditions and in terms of which organisation leads/coordinates.

International lessons

Some key lessons from the RELU project international partners include:

- persistence, visioning and effective communication to decision makers are important
- you can't work with all the people but you can work with the 10-20 percent who are 'connected' with environmental issues and you can use the evidence and good communication tools to influence others
- you need to invest in bridging organizations and in capacity building in local government and community groups
- you need to build a case for collaborative arrangements at local level to be the provider of services and the means to achieve national goals, and demonstrate the competence to do this
- the goals and terminology of integrated catchment management can be too abstract, you must be problem-focused and work to coordinate the actions of the organisations already holding responsibilities relevant to problems such as flood risk, drainage, highway management, spatial planning and water quality impairment.

An agenda for Defra (and White Papers?)

There are things that Defra can do at national level to facilitate local collaborative, adaptive and integrated catchment management:

- set goals in terms of community livelihoods and lifestyle, and healthy catchments and waterways (not ‘good ecological status’)
- facilitate/fund integrated planning at catchment scale
- facilitate, construct and sustain subsidiarity in catchment management
- make provision for and fund bridgers/independent brokers at catchment level
- facilitate/fund training for bridgers/brokers
- ensure provision for adequate monitoring
- invest in common modelling and knowledge platforms that can support planning and evaluation of future scenarios
- make a start and support adaptive management; you can’t wait to understand the whole system
- use the framework provided by the WFD and the support of the EA as regulator and a source of technical expertise to give legitimacy and standing to locally-based ‘bridgers’ and collaborative and partnership arrangements
- review the existing legal framework of mandates and responsibilities relevant to catchment management and make sure it is fit for purpose
- encourage partnerships with local universities to provide scientific support and credibility
- support a continuing dialogue on these issues at national level and promote dialogue at regional level.

There is an opportunity for Defra to further articulate its needs for policy and practical advice, and there is a growing scientific community with expertise in catchment management ready to offer support.

There has been a strong degree of consensus about the principles and components needed for catchment management at this workshop, but Defra would welcome further detailed guidance on how these can best be operationalised in the UK.

Welcome

Yesterday, 29th November, we held a conference at SOAS. It was a day of presentations with a few questions after each, followed by a plenary discussion for about an hour at the end. It was designed in that style as we had been working on our RELU funded project on Catchment Management for three years and wanted to report back to stakeholders and share what we have learned.

Over the last few months of our project there has been a growing dialogue on catchment management between our project team, representatives of Defra and others involved in the Demonstration Test Catchment programme, resulting in arranging this meeting today. Today is intended to be a joint effort, informal and time for discussion. It takes advantage of the presence of our international partners whilst still in London. Our team has been excited about this meeting as we wish to present ourselves as a resource. Our international partners also have a great deal of experience both as academics and practitioners, and we would like you draw on that experience.

Update from Defra:

Some of my colleagues are not yet here so I won't be able to update on some of the policy issues. But I can say I see this meeting as serving two purposes: 1) helping develop policy for catchment management, and 2) further our learning for our demonstration test catchments (DTC).

Some thoughts - drawing on the RELU project, conference, and draft (DTC) vision for integrated catchment management

Why is the DTC interested in this project? Our objective is to demonstrate the link between managing farms and water quality in better ways, and to do that we have to work more collaboratively with stakeholders. What has emerged over the past year is that the DTC consortia nucleus is forming a particular way of managing catchments for water quality and ecosystem services. We felt that integrated catchment management was certainly on our agenda, hence the discussions with the RELU team and how we can explore this further.

We live in interesting times:

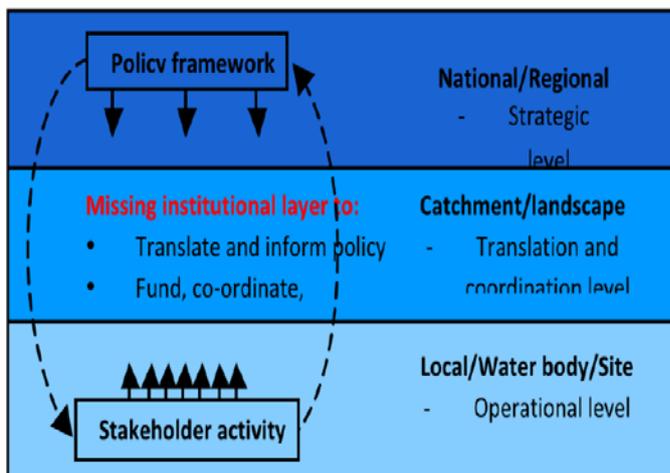
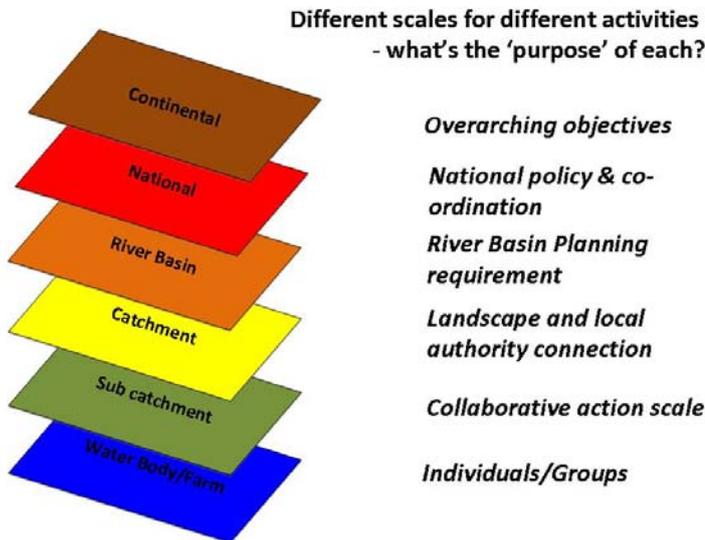
- 2nd round of WFD River Basin Planning needs to be very different – but what and how?
- 1st Environmental White Paper for 20 years in Spring ... *and it's 20 years to the "Perfect Storm"*.
- The Big Society as a developing political agenda.
- The value of ecosystem services as a developing philosophical and scientific agenda.
- The freeing-up of environmental data, and a recognition of the need for integration and holistic thinking.
- An appetite and a unique opportunity for a more integrated approach – catchment based?
- There are two options :
 - Design a system to do the job and fit existing organisations to it – look for gaps where change is needed, and
 - Fit functions of existing organisations together and see if it works.
- The first requires a vision of where we're going/what we want – are we capable; are we patient enough; can 'we' help?

Some common themes from the workshop on 29 November:

- Understand the system – invest in and use best science – before you start to manage;
- Need top down institutional framework (support) AND bottom up activity;
- Relate the scale to the decision(s) to be made;

- A joined-up planning system is essential with clear lines of sight to see where your plan fits into the scheme of things;
- Bridging organisations and bridging people are essential – bridging the science/policy divide and the practitioner/political divide
- Develop and stick to a shared vision with goals/objectives
- Objectives need to be linked – e.g. groundwater quality to land use.

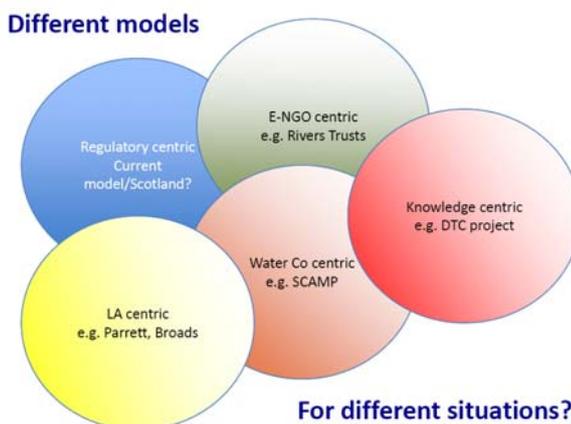
There are number of different scales involved here, and we have to decide the purpose of each. At the river basin scale, it all gets a little blurry. We have a catchment which could be called the landscape – it could be where you have the local authority connection. We have sub-catchments where we are working on a Demonstration Test Catchment level where it's clear that the science has to be done at a lower level than river catchment, where collaborative action takes place. Then there is where everyone is working, including the volunteers, which is down on the farm, on the lake or on the pond. We have six different scales and don't have a good way of linking them. We have a missing institutional layer in the UK between catchment and sub-catchment.



We have very little that connects the policy framework at the national level with the local water body operational sites and operational scales. This is one issue perhaps we can discuss.

The other issue, if we are going to talk about an integrated catchment management approach, is that there are many models. The current model we have is a regulatory-centric model. Another is the NGO centric where the Rivers Trusts are taking the lead and

being the honest broker. There is a water company centric model called SCAMP that is being used in the northwest on Ullswater where the water company is taking the lead. There is a local authority centric model, and the DTC is another. It's using academic consortia and other stakeholders who have knowledge about how the river works to form the nucleus of what could develop into a management system.



There are new roles for flood risk management in England and Wales where at different levels different institutional bodies take the lead. But they all have to work together in developing strategic plans where you have to take into consideration the political as well as geographical boundaries that floods follow. There is an emerging catchment management agenda from flood risk management that could very easily be taken as a type of a model for water quality. Rather than have two separate strands, we should perhaps join them.

FCRM roles and responsibilities

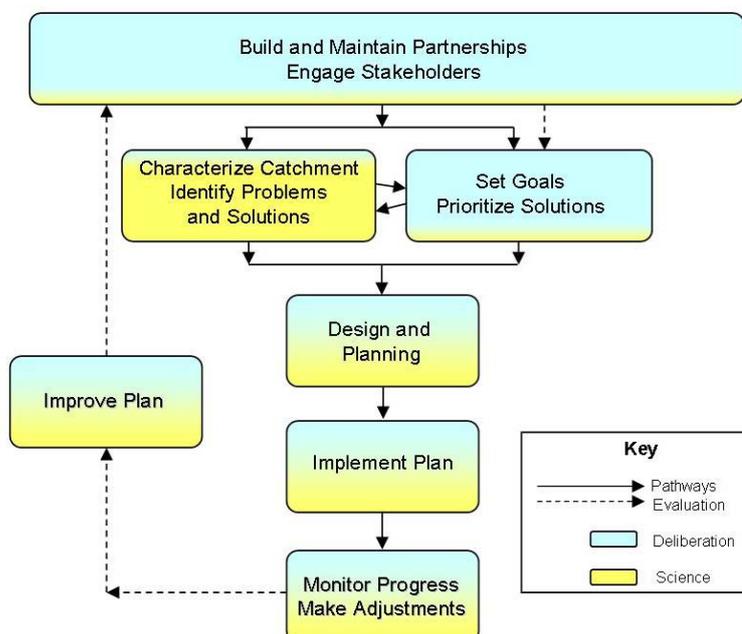


Principles and Components of a Catchment Management Template

This is a brief summary of our work, a 'template' comprising key principles and components we've compiled based on the comparative analysis and lessons learned from our international partners and the piloting we've done in the UK. There is a four page summary of this information that you can refer to. In the summary we emphasize the challenges of catchment management - integrating flood risk management, water quality and water abstraction issues – and the need for an adaptive management cycle. These are complex issues that involve trade-offs between economic and social objectives and environmental and public health objectives. This requires an adaptive management approach and a twin track of deliberative engagement with decision making at the right level, supported by an iterative and targeted scientific research programme. In terms of governance, we've summarized it into the following points.

Governance

- Partnerships: our partners tell us you have to start with what you have, but you do need a cross-sectoral and multi-lateral collaboration, and bridging organizations.
- Stakeholder engagement: there are benefits to be gained by working with a wider representative community group from local knowledge, acceptance and ownership.



- Locally led: for decision-making at the level appropriate to responsibilities for land and water management.
- Transparency and accountability.
- Funding.

Capacity

- Technical providers: to advise, analyze and mediate.
- Comprehensive condition and threat assessments and planning: ideally one integrated strategic plan to guide action plans.
- Knowledge exchange: synthesis and communication of information to decision makers, partners and stakeholders through skilled intermediaries and communication.
- Monitoring of performance and outcomes: inherent to adaptive management, and to sustaining partner and stakeholder engagement, and funding.

Discussion

Moderator - a discussion question to start

- What scope and structures at local, catchment and national scales do we need?
- Q. Before we answer the moderator's question, where do you think we are now in terms of UK governance regarding the RELU project's planning objectives for integrated catchment management, and what do we need?
- A. We are light years away. Spatial planning is completely separate from large chunks of what we need to do in integrated catchment management. The big challenge will be to bring local authorities into the efforts, and we will have to make it meaningful for people working in local authorities.
- Q. Who owns the adaptive management cycle, and how would you map institutional frameworks onto the cycle?
- A. Through the local authorities we need core funding to build capacity. If local authorities are going to be involved in catchment management, they need legislation to push it. One example in Somerset of catchment management, where the main driver was flood control, is that there was funding for 5-6 years, but the local authority eventually pulled the plug as there was a change of management. If the local authorities are to be involved, they need some sort of 'push'. With funding cutbacks, LA's are increasingly restricting what they do to delivering statutory services only.
- Q. Who decides at what level things get done and who pays? If you don't have a driver such as the water companies, then things don't get done.
- A. It depends on which models are being used, and which one works best in certain circumstances; its part of adaptive management.
- A. The solution consists of the involvement of several sectors, and it's important to understand how each of them fit together. One sector (the '1st sector') must regulate and reinforce a duty of care, the '2nd sector' - e.g. farmers, water companies, developers - can fulfil responsibilities and manage implementation within their remit; and the '3rd sector' - NGOs - needs to work where the private sector and government can't. For example, bridging organizations and non-profit institutions are extremely important in the process to link local communities with local and national authorities. One thing that would unite and coordinate across sectors is a bioregional plan.
- Q. At what scale are you referring to in terms of the bioregional plan and breakdown of responsibilities in the 1st sector and the 3rd sectors?

- A. Working up from small catchments grouped together in sensible units. Something like the old LEAPS would be about right. But not every catchment has a ‘sugar daddy’ like a water company. In general, the determination of responsibilities and funding should evolve according to the evolving needs of the programme in that location.
- Q. The question of scale is absolutely critical. Catchment management is a process and there are certain parts of that process that need to be addressed differently. At the national scale we have the WFD, and we could have payments for ecosystem services (PES) locally. We need an understanding of what is needed at each scale. Can we break it down into who does what?
- A. It is critical to have an advisor at the local catchment level that is there for a long time and feels responsible for achieving specific targets, like a water supplier. A sense of continuity and funding and higher level policy support are also necessary.
- A. The issue of scale is crucial. We are about managing water use within an ecosystem. So you have to start at the right scale, which essentially is the river basin. Bioregional planning should be at the right ecosystem scale. You need an understanding of society’s values to know what the community would like from its long term system. You then need to connect with the science community to understand what the limits of change within the ecosystem are. Some of our systems have changed to such an extent that you have got to repair as opposed to intervene and improve. Then you move into the cycle of who pays. Your core businesses in an area need to be functioning and delivering produce or activities within a management regime that doesn’t constrain the future of that ecosystem. You need to understand those core businesses and work with them to develop that management/regulatory regime. Essential enabling activities are science, monitoring, synthesis of your knowledge and communication of that synthesis to people in the street as well as decision makers. Funding for these enabling activities should come from a collective pool.
- A. It takes a long time to get support from the public. The persistence of a “dreamer” in being the driving force behind reaching specific objectives should not be underestimated. The dreamer continually repeats his/her visions/goals, and in doing so recruits the support integral to success of the initiative. The Netherlands project had a dreamer and his persistent efforts eventually got enough support to incentivize politicians to act.
- Q. There seem to be two components here: 1) a vision or an idea, and 2) the need to enshrine it in law. How do we integrate these two in a functional way? What is the capacity of local authorities to further the process along?
- A. This seems to be about connecting the objective and drivers (e.g. the WFD). Clear objectives based on science that come from the outside would be helpful in pointing in the direction of change. At the same time, the objectives must reflect the needs of all sectors/stakeholders rather than just setting one set of objectives and working out the most efficient way of satisfying those needs. How objectives are set is key. Delivery requires stakeholder participation. Limited WFD achievement to date shows why.
- A. I think goals should be set by society. The WFD doesn’t have strong social drivers for good ecological outcomes. Compare that to Australia where 75 percent of the people are saying, ‘fix the bloody river!’ We’ve just come through an election campaign and I didn’t hear the word environment mentioned once. You need much more social engagement with society around goals.

Moderator - summary thus far:

We’ve come slightly full circle. We started with the question, where are we now? And we had the answer that we are a long way away from where we need to be. We then proceeded to speak to that by considering the setting of goals and issues of scale. The

question was raised ‘at what level the goals should be set’? The WFD has handed down goals from a high level but our current delivery is perhaps disappointing. What are the roles and responsibilities of different sectors?

We also had a set of contributions linking to our template, that the principles are fine but in practice how do we map them onto actual structures and processes? What are the details and key factors, like who pays and who drives? We can attempt to do that, but we might find it challenging to produce a ‘blueprint’ for the UK. The discussion and Bob’s presentation indicates that models might be different for each catchment.

Then we came back to how do we set objectives, and do we care about the environment? At what level will these objectives be set? For example, can the Humber basin decide to go for big agriculture and profitable farming and forget the environment? And can the Southwest go for tourism and ecosystem services?

Comment: it is my perception that there is a massive legitimacy gap in integrated catchment management. Although we have the WFD pushing us down this road, there is uncertainty why we are doing this. We have legislation but there is nothing said about integrated catchment management. From a social perspective why should people support this if it doesn’t have political and economic backing? There are a whole suite of issues related to catchment management, and we must relate the governance model to the problem. One could focus on diffuse pollution. If you look at some of the international examples, they focused on the human nuisance and health risks from the pollution that was creating water impairments. That certainly gets peoples’ attention.

Q. We need to work out what is important, what part of the catchment we value and what we are trying to integrate. Agriculturally based catchments inevitably focus on the environment. What do we want the catchment to look like? And, what do the funders think is important?

Q. Consider language - integrated catchment management – what is it? It sounds like something we all should know, or something we already know. Do we really know what management is? Do we need to rethink its value in the catchment? Better to consider ‘integrated catchment managing’? Shifts our attention towards values?

Comment: within an ecosystem approach management should be decentralized to the lowest appropriate level. This helps with knowing how to deal with problems, and is also relevant to funding. If the programme and the money spent are very visible and understandable locally it can create new social norms for valuation of ecosystem services. You need to work locally to have hypothecation of payments for ecosystem services. For example, water companies need raise consciousness and teach the consumer through visible funding mechanisms about the true value of water and related ecosystem services.

Comment: Education of the public is very important in catchment management. Asked where water comes from and the standard response from the public is the tap! I find the WFD very difficult to explain to farmers. When you start talking about targets and science it becomes difficult to pursue this agenda. There is a nice example from our international partners I’ll share. In the US, the Hudson River Estuary Program science coordinator has a big jigsaw puzzle of the entire Hudson River catchment that he lays out on the floor. He has the group put the pieces together. While the pieces are being fitted together, he provides highlights about the catchment.

Comment: There can be benefits of different actions. We talk about integrated catchment management and people are working in it from different angles – water quality, flood risks, agriculture, and conservation – but real integrated catchment management should consider all of those angles and that’s quite a challenge. We need to know the benefits and trade-offs. We need an overall agency to connect all the dots. There isn’t much expertise at the local level.

Comment: I would like to follow up on the comment, what are local authorities for? Someone else said we need people to tell us what they want. I think that is where the connection is. The local authorities have much more connectivity with people, not the least because they are our locally elected people and are supposedly responsible to the people that elected them. There is a connection there that other agencies don’t have, and even bodies like the Rivers Trusts don’t have. The only instructional body ‘in town’ that has that connection with the public and can ask those questions is going to be the local authority. That’s why they are important to bring into the picture.

Moderator:

In the stakeholder engagement in the Thurne and Tamar we’ve gone to particular lengths through ‘circuit riding’ (preparatory contact and meetings) to try and get as many people into the room as possible from diverse groups. We went to particular efforts to get parish, district and county councillors, and people from Plymouth City Council. The Broads Authority was an excellent partner and was always represented in the Thurne, but its unusual given its regional and environmental remit. Parish councillors have always been active with us in both catchments but admit that they lack influence, capacity and resources. In the Tamar councillors from higher levels said that it is great that the RELU project has come along as this is so important, but we are not engaged and it isn’t our responsibility. We conclude that there is real potential to engage with local authorities, but there are questions about mandates, responsibilities and capacities.

Comment: I would like to follow up on the statement that we don’t have public engagement at all. I have just spent a portion of my life engaged in WFD, and it isn’t an inspiring activity and I even care about the issues involved. It’s been a challenge to inspire others with it. One of the things I’ve been involved in is a rivers trust. I’ve been trying to get together a group of farmers to tackle the issues. Their reaction is that they also live in this catchment, they care about the environment, and they want to get involved. This is important in developing a shared vision, and farmers have a role to play in making improvements but are also beneficiaries. Getting them involved and being able to communicate is paramount, and the words WFD don’t help. But, if you talk to them about issues, they can then see a shared vision. The WFD centric model is very regulatory which I feel is a problem and not the best approach. I don’t disagree with doing things at the right scale or level, but getting people on board and developing a shared vision is a necessary starting point.

Moderator:

We in the RELU project went to great lengths to engage with farmers and other local stakeholders, and we exploited the support and prior work of the Broads Authority and Westcountry Rivers Trust to do this. We managed to get farmers in the room because we engaged them as equals and started the dialogue without any preconceptions or preconditions. They worked with us to help develop priorities and the planning process as well as the modelling tools. We had a lot of buy-in. We would even have had two dairy farmers from the West Country attending our workshop on the 29th November in London

if their milking parlours hadn't frozen up. With the right processes and intermediaries, public engagement is achievable.

Comment: We in the water industry in Germany are creating information centres. We have classes in these centres and have many pupils. We invite the pupils to our exhibitions to help educate and inform our customers about the water cycle and our issues. We have tried from the beginning to inform our customers about our issues and they now support us.

Comment: this is a follow-up to the comments on local authorities. Who decides issues, and what are the mandates and legitimacy of local experts? For floods, the EA remains responsible for flood risk and they take the lead. The local authorities take the lead for surface water issues. There are also regional community models, such as drainage boards, that consist of a regional authority and community representatives. Drainage boards, which are very local, work at the sub-catchment level, either elected or by appointment, and directly represent the communities.

Comment: one approach is to look at organizations that are part of the problem and bring them together. You can have a water board that works with flood issues, and another organization that deals with water quality, and many others. They can collaborate to develop a plan based on their resources.

Comment: our flood risk management authorities need to also work with other bodies, such as our highway management. There also needs to be a framework where the public can ask questions.

Comment: currently we seem to be setting the bar for public engagement at quite a high level. For example our EA gets its mandate from committees and liaison groups (e.g. RFERACs) and that's how they engage with the local communities. It seems straightforward but it might be at the wrong scale. If the consultation is at the right level it might be more effective.

Comment: it is important to improve management through local participation. This means changing the mood of management from nationally dominated forces to promotion of more local initiatives.

Moderator:

How do the drivers work? I find it a little hard to believe that all Australians are bleeding heart liberals! Why do the Australians have stronger social and political drivers for the environmental work they do? It is difficult to compare the role of local governments because structures and roles are different. In the USA local responsibilities are highly valued and fiercely defended. How can local priorities relate to national objectives?

Comment: In Australia, we have a highly urbanized population and it is one of the really big challenges. In Australia and here in the UK you have people who are not well connected with the landscape. But there are also a lot of people who are connected - hunters, anglers, bird-watchers, walkers, farmers - a whole range of people you can start working with. Then you start to build a broader body, and have your communication such that people understand what is going on. Most people only worry about their back yard. Eighty-ninety percent of people don't understand where they sit in catchments. You have to connect to the 10-20 percent of the population who think strategically and have the vision. And your vision has to be about what your community is looking for in terms of

where they live and what they interact with. We use 'Healthy Waterways' as part of our vision and the goal that by 2026 our waterways will be healthy. Then you go to the science and determine what that means in terms of measurability. We also have a vision that is about life styles and livelihoods. One can immediately measure those elements. Then you can construct your data acquisition and knowledge through monitoring and benchmarks to see where you are. Then, in reporting, you communicate in a really simple language such as a simple report card. So the person who is only interested in his/her back yard can see the status of that creek. For us, local government is absolutely crucial because they determine the planning schemes, do the development assessments, and define what the urban footprint looks like. One of the big drivers of change for us is urbanization. Also, the connection to people is also crucial. The local governments are also the flood control managers and they need to understand the role of the upper catchment in flooding. Flood mitigation is often about slowing flows in the upper catchment before it gets down to the channelized lower part of the catchment. The issue of understanding the hydrological/ biological cycle starts to make sense of how we understand ourselves in society. Unfortunately, many local governments do not have the capacity to engage in many of these issues, as there may be only one person dealing with the environment, health, cats, rats and dogs. We have invested as a bridging organization in a whole range of capacity building processes. We do the hard jobs of developing technical guidelines and doing the training and bringing local government together to share experiences and collectively learn. The question of funding is an interesting one. In Australia 85 percent of the taxes are garnered by the federal government. One has to look at where the government policy directives are and how they are going to be delivered. Then build a case to be the provider of the services they are looking for, start a dialogue, and then you start to shape their agenda.

Comment: I've worked in watersheds a long time, and most Americans don't approach watershed management in this way. We are very problem driven and think in terms of water uses. The primary water use is for drinking. Long Island which is a highly developed island depends on groundwater for its drinking water, and people are living on top of it. Even ordinary citizens are concerned about how much fertilizer and pesticide is put on lawns as they know it will make its way down to the groundwater given the sandy soils. Out of considerations such as that catchment programmes emerge. Based on the problems that need solving - for example, protecting fisheries or protecting recreation areas - people become interested and a catchment programme emerges as a means to protect the use of whatever is threatened. If one approaches it in this way, some of the difficulties we are dealing with today are solved. Wetlands are a good example. In protecting or remediating wetlands, we need to know who is responsible and at what level. For us, farmers and highway managers are the constituencies primarily responsible for wetlands. Highway managers renovate roads and bridges, and are constantly threatening wetlands with this construction; and they also do wetland remediation. Given the problem a need for coordination and coherence emerges. In catchment management, there is a need for coordination and coherence in what is done. It's a much more pragmatic approach to management than approaching it in a theoretical way; its retrospective and problem driven. If you went to an American group and said let's have an integrated catchment programme, I doubt one would get very far.

Q. Does that mean its retrospective all the time and there has to be a problem arising for some action to happen? So if you are looking to protect a future resource it would be difficult to develop that approach?

A. In a UK sense, when you consider flooding, you should know what the drivers are in terms of the real problems, and it would be advantageous to work at a catchment level. If

you approach it from the problem you are trying to solve it might answer some of the questions of who should do what.

Comment: in the EA we are developing a catchment delivery approach but are having difficulty given responsibilities at a national scale. We want people to engage. We are trying to use existing administrative structures for the 7449 water bodies in England and Wales. It needs a governance structure and funding for that governance structure. We have a great opportunity and it might not have been mentioned during the election, but the government is trying to build a natural environment strategy, and there is water White Paper coming out. There are institutional arrangements around the water paper that involve water management and water companies, so there is a lot going on. I don't disagree with what has been said today. Everyone knows the theory, it's putting it in practice that is the problem as there is a lot of self interest. However, although most of the land is privately owned but there is a lot of national pride in this country making people do the right things.

Coffee Break

Moderator:

There is some consensus that our (template diagram) is the type of process that is necessary, but several people wanted to talk about what is 'above' the diagram. The principles of catchment management we have talked about are increasingly accepted. There is some flexibility in the diagram and the model could play out in several ways in different locations. Bob's models shown earlier illustrate that. Let's assume Defra and the government are content to see us moving in this direction, let some of these models play out in different ways, but they don't want to get involved in the 'nitty gritty'. It will need actors at the local scale. What can Defra and government do to facilitate and enable it? Are there any obvious barriers that government should be thinking about to remove? Are there opportunities now, particularly things that could be done that can help? What can government do? They are focused on what should go into the white paper, are there changes in policy, changes in legislation - what are the recommendations you can suggest to support and enable policies? What would enable better knowledge generation, communication, and public education and societal engagement? What would enable the establishment of some of the bridging organizations? How can we have national goals but have a bit more local autonomy in setting priorities within that national framework?

Comment: In Defra in the last year we have been getting feedback about what has not been working well. There is such a lot of information and different approaches and we have to set a lot of it out in the next draft of the white paper. One of the things in it is recognition of need for integration among government agencies. We need to come up with a more integrated environmental goal or vision statement. If we put in it meeting good ecological status, it means we have to improve nutrient management, tackle invasive species and hydrological impacts. Is there a more sexy way, or better way to say good ecological status with a better rationale - we need a hook to get this into a white paper?

What are the constraints and are they the same everywhere? For example, if the major constraint is funding what the rivers trusts do, we don't know if it would work everywhere. There are so many interventions we could make but I don't know what would be best. We need your input. Perhaps you could recommend your top two actions we could put in, and also perhaps come up with healthy waterways indicators?

Comment: There are lots of ways a catchment based approach can evolve in localized areas. What we need to work out in Defra are the key actions we need to take to enable and facilitate. We need to know what is stopping interested parties from getting together. Is it a lack of funding, vision, or lack of knowledge? Do we need someone to facilitate – do we need dreamers? Do we need ‘bridgers’?

Comment: The Americans start with the problem. One of the criticisms I’ve heard about river basin plans is that they don’t define the problem well enough. They don’t even say what the issue is any particular catchment. Is that a challenge for Defra that we don’t have enough of an understanding of what the problems are?

Comment: In the Tamar it was our experience that people didn’t really understand what the problem was among both technical and non technical individuals. There wasn’t a consensus on what the problems were from the beginning.

Comment: it is important to enable the local community. We had a lot of problems historically, and we are still having them. The dominance of funding decisions particularly by national politicians - i.e. nitrogen sensitive areas, protecting groundwater - are ruled by national politicians wanting to redirect funding. You can’t run groundwater protection or farming on that kind of basis. There is a need for having individuals on the ground for catchment sensitive farming for a long time, not sporadic funding, with decisions made at the last minute whether it will continue. Those who are working and building trust on the ground don’t know if their contracts will be renewed. Government needs to give up some of the control it has to local communities so the local bodies can deliver. And the local bodies need funding to deliver.

Moderator:

So there are suggestions that the government should be prepared to give up control at local level to the local communities, and this needs a funding mechanism. Would a local community be ready to step in? We can see that the WFD might not be very inspiring to read at the local level, but it is clear that the EU and the government want to clean up the rivers and improve ecology. Often in meetings the farming community is put on the defensive and in many ways they haven’t been engaged. Is the farming community ready to stand up and say we are part of the problem in terms of water quality but not the only part? They are also part of the solution, not least for flood risk management. It’s a two-way street, the government has to enable but the bottom up has to organize and commit and offer to deliver. How do we bring those two together?

Comment: my experience and my intuition is that the farmers will do that when given the evidence. We have created our own hurdles in that we have created national institutions - the EA solves all the pollution problems and that’s their job. And they aren’t there to facilitate local action.

Comment: What this country has is too much top-down direction. It needs subsidiarity - it needs to facilitate, construct and sustain subsidiarity. You need to facilitate local people to get the capability to provide leadership and localism as one size does not fit all, and then you need a policy framework that says particular schemes must be implemented in a regionally sensitive and local manner. You need a commitment from the government to foster, sustain and encourage subsidiarity, then have it engage with the structures that emerge, as the Rivers Trust have started to engage with government and be engaged by it.

Comment: I was involved several years ago in the Catchment Abstraction Management Strategies (there were 129 CAMS), and I thought it was a pity that water quality was not included. Those CAMS could have had a more integrated approach. I sat on the Northwest Norfolk CAMS and that had a large set of stakeholders and seemed to work. There is a working group in the Thurne that is a good example of a stakeholder group that is interested in the catchment. It can work as long as you have the right sort of delivery mechanism. If the agency is not involved, another honest broker is needed.

Comment: To make good ecological status sexy you have to know what people value. And how you frame that depends on your area – things like sky high prices for houses next to the water, blue green algae, birdlife, etc. In the Broads, we have a catchment that occupies two thirds of Norfolk and a slice of Suffolk as well. There are large areas where people aren't engaged but they know about the Broads and its special interest areas. We take a golden thread from the WFD which is dull as ditch water, and we have a similarly dull water quality partnership where we talk business. It's not very interesting to people and it's too big. But we have smaller partnerships, like the Thurne, where we look at what is happening locally and build on that. It's taken us years to do this. The UK will always have different models and they try to squash them into one size fits all. We need to use our local champions for local issues and build on those.

Q. What do you need from the government? Do you need funding?

A. As a local authority (Broads Authority), funding is the key issue. And it all relies on issue-based individuals who recognize they need to work in a particular way.

Moderator:

An organisation like the Broads Authority appears to have a number of advantages: being a form of local authority, being catchment based and having some scientific and technical as well as administrative capacity. National parks may have some of the same advantages. For example, the Loweswater group has been involved with the Lake District National Park. Such local authorities seem to have more capacity for stakeholder engagement and for commissioning research as well as more technical expertise.

How prescriptive can you be in government? Can you say at the regional level that you want them to come up with a vision statement or a planning process that produces a strategic plan? And that you want them to identify and list all the organizations that have relevant roles and responsibilities to tackle the problems, and to set out in the plan how to have better partnerships. People in the Broads Authority would like to do more of this, but they run into institutional barriers - silo thinking? Do you need to tell people they have to produce a plan, or is that too prescriptive?

Comments: if we are talking about ecological status, we are talking about ecosystems more widely. We are also talking about a much bigger group of partners. I think this all depends on the changes coming about, which allows people to come together to discuss issues in their particular place. The government needs to make space for boundary crossers and for people to facilitate that coming together of different interests - technologists, scientists, and the local people - regarding important issues at the time. This must develop locally it isn't something you try to fit somewhere else.

Comment: a more practical scenario is to give one person responsibility to bring others together to achieve what is necessary; to perform the bridging role. Then you only need to fund that one person and you will get others keen to have a role as long as

funding/resources are available for action. If people feel they will have input and that things will change, that will get people to the table.

Moderator:

If Defra were going to fund these posts - call it a 'bridging person' - are there issues of what scale and in what organization they would be based? Or would they be independent?

A. It would be dependent on what area and according to the objectives and principles of the plan.

Comment: The 'bridging' person needs to be an honest broker. And we need an institutional framework and core funding to make the honest broker flourish. Then it doesn't matter who takes the lead.

Moderator:

We have to recognize that many initiatives start in an informal way. Leadership and visionaries can be significant. As things evolve it is important to be given legitimacy and standing. How do government enable that? It's not about creating new regulatory bodies. If they become regulatory their role may become more difficult. They need sufficient, standing and continuity over a long timeframe - 15-20 years or more – can the government's white paper allow for that?

Comment: we need a Catchment Challenge Fund, supported by a post. The third sector, the independent broker is vital to the process. The Environment Agency needs to work with another party.

Comment: we need to make sure problems are identified through assessment of the goal of 'good ecological status', and use this to make it relevant and meaningful to people. Monitoring is also important to make sure you have right benchmarks. Need to work with the resources you have.

Comment: trust and ethics are essential. On your slide you asked what the barriers are. Barriers are in our own minds/conceptualisations. We have to understand the legal and economic structure/understand the system.

Comment: from a bio-geographical sense there is a capacity to define a catchment. You have to use language other than 'good ecological status', such as healthy catchments and waterways, sustaining our natural environment, supporting community livelihoods and lifestyles. The Australian government invested around the country in a set of priorities in a water quality improvement plan. A certain set of standards came with the plan. Picking up on previous comments, the UK could start bio-geographical planning at the river basin level, and start with funding three plans a year. Then in five years time you probably have two thirds done. The ones you choose could be picked for critical areas. For example, you have classic areas for rising sea levels in the Broads.

At the national level government also needs to invest in enablers. You have to start thinking of the problems of the future, and you need to invest in good modelling for that. You should invest in common modelling and knowledge platforms that are available to bio-regional planners for use in the development of plans, going forward in a systematic way with a set of decision support tools applicable across the country but capable to be localized at the right spatial scale. Then you build in your modelling framework so you can report conditions and trends for 5 years. Government is not good at doing this from

our experience. You need honest brokers to work and build up relationships and invest in that infrastructure.

Comment: White Papers only speak to a narrow part of society. The issues have to be framed in terms of quality of life to be meaningful for people.

Comment: currently the national Government thinks about the environment on two levels, meaning there are two White Papers articulating national policy. One White Paper is dedicated to the natural environment and another is dedicated specially to water.

Comment: the ecosystem services framework is a consistent way to identify and value our services. That is an important first step. It may be useful to develop a system of green accounting.

Moderator:

Where is Defra's thinking on green accounting?

Comment: on what scale do you do that evaluation? At a local scale there is some decision making to do, i.e. do you devalue agriculture and value nature?

Comment: don't use good ecological status - try and capture what people really value. Also payments for ecosystem services systems may take the management programme in the wrong direction; for example, its hard to value and get payments for biodiversity.

Comment: the Foresight Report has been a starting point, it is important to understand the benefits of ecosystem services. A broader concept of the value from land has to be embedded in policies.

Comment: we also need to assess the value of groundwater.

Comment: we shouldn't just focus on water. All things are interdependent.

Comment: are national valuation estimates useful, for example, that an otter is worth £50, or should there be local empowerment to make choices.

Comment: Germany's experience with bioenergy expansion has demonstrated that it is important that government directives such as the White Papers act as a brake against economic drivers. For the most part, economic drivers ignore environmental standards.

Moderator:

Are there any other suggestions for Defra, in particular at the national level that can help facilitate this process?

Comment: just start somewhere and continue to build the knowledgebase. You can't wait until you understand the whole system. Also give yourself time to make progress as each time the process is different.

Comment: there are a lot basic things that go wrong that can be put right very quickly with the right organizational arrangements and the right funding.

Comment: who is the audience for the White Paper? It is important to recognize that the government operates according to national targets like 'good ecological status' or

sustainable water management. It gives local catchments something to work to and leads to action.

Moderator:

Initiatives sometimes come up from the grass roots, but at what point do they need more formalized legitimacy and standing? In the US, they have to look within the existing laws for what they can do. The possibility of using inter-municipal agreements is part of the law and something they can use. Maybe we have an advantage in the WFD as it can be used to legitimize the standing of some of the bridging organizational setups we would like to see emerge. These would always involve the EA as a partner, and the EA need to retain its role as regulator, and it has much of the technical expertise. However, they may stand back a little as this bridging organization leads, but under the framework of the WFD and getting things done, which gives some legitimacy.

Comment: catchment management is a means not an end. When we talk about local authorities, what does that word mean in the UK? When I previously lived in this country there was a public health system but I think that has evaporated. I believe there are still environmental health officers - but what do they do? In New York State the public health departments have a key role especially for water quality. I'm not sure to what extent the legal system in the UK already provides systematically for what we have been talking about, right down to the lowest level. This is a starting point, what legal authorities currently exist. In a case where there is insufficiency, we have had discussions with the Rivers Trust who do exceedingly well, but they have no legal standing. There is no statutory recognition for them as technical providers. Should there be some enactment that recognizes this?

Moderator:

If that knowledge doesn't exist could a review of the existing legal framework of the mandates and responsibilities at that level, particularly for local authorities, be useful? Would that be a White Paper activity - to understand where the gaps are and how it might be changed?

Comment: that could be tied into this notion of a 'competent authority'. In theory there is no reason why an organization or local group couldn't be designated as the entire region's authority, or a second tier competent authority for a catchment or a river basin district.

Comment: you can you give legitimacy to charities just by describing how they are set up and their purpose. Trustees become responsible for this and are accountable, and trustees should be drawn in part from local authorities. You can give charities terms under which they have a mandate for certain responsibilities.

Moderator:

Does the charities commission require all the activities and documentation to be accessible and open to public scrutiny?

A. The French see no distinction between a charity and other public bodies providing we have representative trustees. At least one has to from the public sector - that is the main thing.

Moderator:

In our template we have a note on transparency and accountability. Along with powers and responsibilities delegated to a lower level comes the need to accept the powers and

duties and be accountable for performing those roles. These are lessons we have learned from our international partners. Is that part of a White Paper agenda, i.e. to look at those accountability and transparency mechanisms and see how they might be reviewed and enhanced in the future?

Comment: it is this accountability that our local authorities now have in looking at flood risk, since the Flood and Water Management Act has designated Upper Tier Local Authorities as 'Lead Local Flood Authorities', this provides the incentive and support in getting the right organizations around the table to ensure there are partnerships and in making it happen.

Comment: I am struck by the suggestion of honest brokers. I wonder whether government would consider sponsoring training for those with these kinds of skills. We will need people with these kinds of skills in the future.

Moderator:

In the Healthy Waterways programme in Australia - a bridging organization at the regional level - they invest in capacity building with partners at a local level. How does this happen? The idea of Defra setting up a training programme for brokers doesn't sound like a way of doing it, but they could provide funding.

Comment: this is a follow-up to a comment about explicit and implicit valuation - green accounting - it's really important to maintain the difference between price and value.

Comment: Comment: there are Defra-sponsored training courses for local authorities at a Southwest university on flood control, recognising the new burdens that LA's face in their new role as Lead Local Flood Authority.

Moderator:

Partnerships with universities are also really important. The Westcountry Rivers Trust do this. They have worked with SOAS and UEA in RELU projects, but they also have partnerships with universities in Plymouth and Exeter on regional issues. And in Queensland the Healthy Waterways Partnership works with the University of Queensland and other universities. Bridging organizations should be turning to their local universities to build up their knowledge base and scientific capacity and credibility as much as possible.

Comment: fast results are important to the process. Therefore, such an initiative can be implemented quickly and the process continued to learn from the experience and refine the management practices in the future. Reorganization of administrations is inefficient; just work with what you have.

Moderator - conclusions for today and next steps:

We hope there have been helpful suggestions as there have been a lot of good ideas shared. How do we move on from today? How can the work of the RELU projects best be utilized? How do we sustain research on this agenda and make sure that the scientific work is strengthening the knowledge base for catchment management? Has this meeting been a useful exercise, do you see further workshops in the future? Will this activity help the DTC agenda? Are there any comments on how we build on this process and how we can utilize the results from the RELU research?

Our work is continuing as we have more RELU funding to work with the Westcountry Rivers Trust on their project to mobilise resources from the private sector to work on catchment management with farmers through payments for ecosystems services. We are helping them to study from an institutional perspective how that can develop and some of the economics of how that works. Although our current RELU grant ends at the end of December 2010 we will continue networking and the dissemination of lessons and outputs. Tobi, who has undertaken our modelling work and who has been a big part of our stakeholder engagement at the local level has recently gained a two-year knowledge exchange fellowship from NERC. He is continuing to develop applications of his modelling approach with the Broads Authority and the Westcountry Rivers Trust.

We are very keen to continue our network and the international exchange of experiences. Would anyone like to comment on next steps or other points?

Comment: in Defra we are using the DTCs as an approach that can get down to the real issues and to get people to collaborate with us. There are questions that you can help us answer.

Comment: this is to those here from Defra. It's nice to have the set of principles defined by this project, but would it be useful if those principles were operationalized a bit more, and we could say that adaptive management on the ground would look like this. Would taking it to a more operational level be helpful?

Comment: absolutely, how can we help with what you need to produce? Are the next steps up to Defra to develop a policy proposal for facilitating integrated catchment management at the local level?

Moderator:

Today I introduced our RELU project and its results as a resource for Defra to draw on. The RELU programme has funded ours and other projects, and there is growing expertise in catchment management in the University of Lancaster, UEA and other institutions, so there is a scientific community to support that agenda. Tell us what you would like and we will help.

Comment: next steps could be the following. The RELU project team can work up a governance structure from core principles. We are currently using the same WFD programme in different catchments for different and mixed results. We need to understand why, and we need to develop arguments and economic understanding about why some are failing. This would help our overall understanding of sustainable catchment management.

Comment: one important thing to manage is the expectation that different areas of the country will have different expertise. We need to realize how much the third sector is already contributing in actions that are crucial in the ways we are managing our resources. This is a good way to ensure that our water quality is safeguarded. Before we add further expectations for our third sector we have to learn what capacity already exists. And that it will require further funding.

Comment: Defra does need to work out what it needs. And there is a strong view that catchment management is the right approach for water quality. But for flood risk we are less convinced that that is the way to go. We are trying to understand how all things - flood risk, water resources, water quality - need to be looked after and whether together or separately.

Comment: one big division in the US water law is between the Clean Water Act and Safe Drinking Water Act on one hand, and all the flood laws on the other. There is a separate federal agency largely responsible for floods, based on the Federal Emergency Management Act. But there is also unity as it's increasingly recognized that to manage water quality we have to manage drainage, and if you manage drainage you decrease the flood risk.

Comment: in Defra we need to make this case and articulate it as a policy to be pursued by the government.

Comment: in Australia we are moving to a paradigm of water sensitive cities, and that's about managing flood risk, management of water quality and water supply as well as ecological amenity values. We started looking at our cities around public health issues as water was about public health, and we have effectively started a continuum so that now we are talking about water sensitive cities that are delivering on a multiplicity of services around water as a risk, a benefit, and an asset. It has to come together somehow.

Comment: to me, that is exactly what adaptive management means - doing the same process each time but the problem you are facing changes. You might start out trying to manage one problem but end up with another.

Moderator:

The governance arrangements evolve along with the understanding of the problem, tools and techniques. That is why in Australia, over 20 years ago, they set up with a small group, and it's grown and changed in status and scope. Establishing bridging organizations in whatever you need for catchment management needs funding and help with capacity building, and the bridging organizations need to be given some guarantee of continuity. But there are also these expectations that they will evolve and develop.

Comment: regarding what role is there for further workshops? We need to keep talking as we are not all yet at the same level of discussion concerning what catchment management is really about. For me it's about win/wins and the trade-offs and having a forum for efficiency savings so we don't repeat the same things over and over. We don't want to take measures in one place and then realize that we could have done something else for an additional benefit if only we had been talking to each other. Continuing to talk will help us all come to the same level of understanding about what we might try and do. We are a long way from designing the best structure for what will be done in the future. Defra still needs to have in their minds what the questions are. The agency needs to decide what the problems are in each place. We're at quite a low level of understanding of what it is we need to do. So to design a system that will solve problems is bound to fail as we don't know what the rules are that we are trying to develop. If this kind of forum happened at least two or three times more it wouldn't be a disaster, indeed it must help.

Comment: I agree. We have catchment action plans, and then we produce catchment management plans, then environmental action plans leading to river basin plans. But as in the Tamar, when you have decided what you need to do, actually doing it is far more difficult. The EA has capability for diagnosis and planning, but we need to be more open and we need a better delivery system.

Comment: the DTCs can be used to test some of these principles, but which ones? We can certainly focus on the technical things we need to facilitate in a catchment; for example,

improved science, modelling and decision support systems. How can we help farmers make the decisions they need to make to deliver water quality improvements but also other environmental targets, recognizing that there is more than just water in an integrated plan?

Comment: we in Defra obviously need to keep talking as there are too many things unanswered. There is so much going on and we need to work out who is responsible for certain things. We need to keep meeting to keep us moving in the same direction and for a vision to emerge. We will try to come up with a project in the agency to develop the next steps in answering some of these questions.

Moderator:

We will continue to remain a resource as stated earlier. Feel free to channel requests to us and if you would like more information about our project and what we have done. If you would like to channel requests to our international partners you can do it through me or directly to them. I'm volunteering their further services, but I'm sure they won't mind. Thank you all for coming, and we look forward to further interaction in future.