Lessons learned from successes and failures of Stroud Valleys community-led water management

Adam Broadhead

March 2009

Water21
(Department of Vision21 Ltd)
30 St George's Place
Cheltenham
GL50 3JZ

01242 224321

A Discussion Paper

Slad Road, Stroud, 23 July 2007 (courtesy Zara Davis)

Introduction

Community-led water management could just be romanticised as a "back-to-basics" approach, a yearning to turn the clock back to simpler and perhaps more certain times. In the Stroud Valleys, Gloucestershire, the concept actually underpins a growing network and variety of community groups and organisations with a clear environmental focus; within which sustainable (safe and economically viable) water management plays an increasingly central role for the resolution of critical risks.

In the contemporary era there is limited experience of similar schemes in Britain; though in actuality it does reflect a physical move towards the return to the former small scale localised municipal control, ownership and implementation of water infrastructure, which prevailed prior to the 1974 water industry reorganisation (formation of Regional Water Authorities). As well as harking back to an even earlier era of decentralised, embedded small scale water power – now prefigured with the return to renewable energy, increasing energy costs and inflationary pressures.

It is important to recognise that any observations of successes and failures here are limited because this is a developmental work in progress, but with clear key drivers that will likely accelerate this process now. On close examination, lessons can be learnt already, particularly from experiences of the early stages. This experience can be used to make intelligent commentary on how this could further develop. This paper considers

management from planning, to implementation, and beyond, in order to learn lessons from the community-led approach so far.

Background

Five watercourses converge at Stroud in Gloucestershire, and begin transition from upland streams cutting through narrow valleys to lowland river meandering across floodplain. Water is central to the region's history and earlier cultures; formerly powering the development of the industrial age here. Original patents for water power engineering were developed in Stroud resulting from early innovation here (pers. comm. Lionel Walrond, 12th March 2009).

Today there is less direct economic reliance on the local water environment for energy, agricultural produce, fisheries, and drinking water supply – and there has been a converse increase in costs and problems associated with these declines in local usage. Water and sewage are handled by a network of pipes, pumps and treatment plants; most drinking water comes from 15 miles away, replacing former local spring water supplies (now often reduced and contaminated); energy is imported from the National Grid; salmon are no longer local endemic species etc. The district suffers from increased flooding which causes stress, damage and inconvenience; sewers regularly discharge untreated human waste into streams and onto land, with potentially serious health risks; wetland and woodland habitat have been lost to agriculture and development; aquifers have been over-abstracted, etc.

Sewer surcharging during moderate rainfall, Bridgend (Water 21)

These problems are all relative, and not everyone would recognise them all; many are rural issues and nowadays much of the population are urban dwellers. Despite this, the Stroud Valleys communities have called for action to tackle these problems to varying degrees. There is a widespread network of local community groups who organise small-scale action, and several local organisations promote sustainable solutions. The Transition Towns movement has strong foothold in the area as a "network for local people and groups working on the transition to a locally based low carbon lifestyle". Another, Vision 21, aims to "support local solutions to global problems," by "changing attitudes and enabling communities". A department of Vision 21 (Water 21 - W21) focuses on resolving critical risks associated with environmental water management, basing its approach upon the recommendations from the UN Agenda 21, (Chapter 18), which directly calls for empowerment of local action for achieving sustainability implementation.

Grass roots; bottom-up; community-led - these concepts are central to the local action groups and organisations and particularly apply in the context of water management, yet any real progress with water management has been slow. A fully integrated bottom-up community based approach to water management has not yet come close to fruition in Britain. Yet already clear, self-evident and important lessons can be learnt from progress achieved so far, for the planning stages, through implementation, to ongoing management.

Topsoil losses resulting from tillage and use of agrochemicals on fragile Cotswold Brash Soil, Painswick (Water 21)

Holistic planning

Holistic water management recognises the wide reaching web of inter-connections of water within the environment and community, and the need for plans enabling a cross-cutting, multi-disciplinary, multi-benefit solution to resolve a range of problems (Allan 2003). In the Stroud Valleys this means planning and enabling a unified solution which tackles flooding, pollution, water supply, agriculture, renewable energy, whilst also considering social and economic aspects.

The question arises, of local vs. "expert" knowledge, and who is best placed to identify optimum solutions. As a technical proposition, a truly holistic plan can be a major undertaking, and is usually the domain of expert consultants and a team of specialists. Resulting integrated catchment plans are often vague in their recommendations (e.g. Severn basin management plan), or may offer very expensive solutions and thus rarely become fully actioned and are therefore largely ineffective in achieving wholesale positive change. Local input will usually be considered (and is a legal requirement) but this will usually be diluted by the 'authority' of expert consultants, who are often remotely located, may use a 'one size fits all' approach and can also be engaged by other commercial vested interests – who may not welcome change. Thus even major international protocols and agreements (eg Ramsar & Agenda 21) become sidelined and unfulfilled.

Action groups across Stroud benefit from local knowledge and expertise, and are fiercely proud of it. However, the assumption by action groups that local "native" knowledge is superior to outside expert knowledge, or vice versa, is not helpful (Bell and Sheial 2005). In practice, the debate of whose science is superior serves to carry forward whichever plan is currently most popular with the context of prevailing national government policies; and this does not yet properly consider that both local and expert knowledges can work together. Public opinion also being largely excluded from any consideration. An anomalous situation as the lead business sectors here (water, energy & food) are determined by free market forces according to Statute Laws and international trade agreements (WTO) but in practice are excessively regulated to prevent evolutionary progress that respects consumer preferences.

Because "science" varies from group to group according to various vested interests, social context and experience, the only method of resolving these issues is by putting confidence in seemingly neutral and unbiased numbers. This has now created one area in which the community and central management have joined forces, in the modelling and validation of dispersed upstream attenuation as a method of flood management, in the resolution of a now evident critical risk to the community.

The Environment Agency (EA) recently supported novel local expertise in the form of W21, and this collaboration has been a success in achieving an outline hydraulic plan with funding for implementation on Slad Brook (Pretto 2008); with EA now adopting this concept elsewhere. W21 needs now to validate its policy ideas using the language and convention of the existing top-down management approach and develop the legal framework for wider implementation. That it apparently would not be trusted without EA backing demonstrates the way in which knowledge is played out as power relations in the wider science debate.

Members of Slad Brook Action Group, Water 21, Environment Agency & Gloucestershire Wildlife Trust walk the Slad Brook identifying potential flood water storage (Water 21)

That statistics and modelling themselves are impervious to cultural biases is also an assumption contested by many commentators (e.g. Stott and Sullivan 2002). In practice, the control of hydraulic models usually lies with the experts for reasons of high cost of use.

A sense of awe from the community is created simply by keeping the technology away from them under normal circumstances. There is an implicit trust of models from those members of community groups who are in awe of the modelling, but a stony disregard from those who are more sceptical of it.

It can be argued that it was the grass roots freedom from conventions of a centralised and effectively authoritarian system of water management that enabled a novel and ingenuous holistic plan to be conceived in the first place. We can find no mention of specific details for such holistic flood management elsewhere which can incorporate the wide range of potentially self-funding options included, such as silt retrieval for fertiliser, irrigation reservoirs, fisheries, reedbeds for community wastewater treatment and renewable (hydro) energy utilities. In actuality, this particular scheme derives from an intergenerational transfer of former ancestral, locally derived, knowledge and approaches to water management now validated and adapted to suit the present day situation.

A cynical view would suggest that the grassroots organisation "had its hand held" by EA, who were trying to include, as well as placate, the community in resolving past failures of water management. This is not inherently wrong, in this case it was the community

effectively pathfinding a new policy approach to water management alongside EA, who were then convinced of its wider potential.

To come full circle, it is interesting how this story is told by community groups. In some (but not all) cases, W21 has become a champion of the local vs. expert knowledge debate. This has been one of the resounding successes of the bottom-up approach. Not only does it challenge a straightforward assumption of knowledge and power gradient *onto the community*, it has shown that it is possible for the top-down and bottom-up to work together. However, use of the conventions of EA management to support the holistic plan seems a necessary step to further develop a trust between the groups; in future, such collaborations can then occur more freely and on a more equal footing.

Can it ever be put in practice?

The majority of groups in the Stroud Valleys that might be considered part of the grassroots community movement were formed out of deep frustration with lack of progress by councils or EA to put right the problems affecting them. Since the 2000 flooding there is now a flood action group operating in all but one of the valleys. These groups are often looking for fixes to water management which can be quickly implemented and that are permanent. Most now recognise the importance of the holistic plan in ensuring that the all problems are resolved on a wider catchment scale.

A meeting with one group provided a box-folder of correspondence with EA and councillors over three years, but still the flooding was a chronic, unresolved problem. In this case the action group felt compelled to find a solution and not wait on the centralised conventional approach. Grassroots have thus empowered communities and provided hope for much faster resolution of problems associated with water cycle malfunction. A common action with these groups across Stroud is arranging of streamside walks, river tidy-ups, and guest speakers on related topics. In practice, this does not directly help resolve problems but foster awareness of them, while creating the impression of progress and develops the dynamics of the group.

In one valley, the integrated water management plan developed by W21 and EA provides a good example of why "progress" is difficult to presently define. This term depends on perspective. The same plan and end target are agreed in principle by both W21 and EA, yet the proposed methods to get there vary starkly between the two. The EA (representing the top-down, centralised control) favours conventional, one or two large scale civil engineered reservoir ponds. W21 (representing the community bottom-up approach) advocates multiple agriculturally engineered soft naturalistic impoundments, with a minimum of concrete. Both could work in theory, but what is interesting is the difference in interpretation of policy depending on background. Arguably, this again reflects the local vs. expert debate again, especially in the way the "naturalistic" be compared to the "engineered" approach. It feeds a language which plays on people's emotions, with hints of the "noble savage" and green-washing creeping in. Thus the whole issue of progress is not a strictly clear one; though an answer here might be implicit with the EA now promoting a multiple soft engineered pond approach on other, even smaller brooks (eg Horsebere, Gloucester).

The different interpretations of implementation methods also reflect issues of cost-effectiveness and timeliness. Management linked to big business or government is subject to higher scrutiny and health and safety legislation. Preference for highly engineered, professional solutions partly arises from this, but this drives up costs dramatically and escalates planning time, slowing up progress and also often invoking a regular requirement for Compulsory Purchase Orders with landowner resistance.

In favouring low-tech methods, grassroots groups across the Stroud Valleys are found to be willing if necessary to do the manual labour themselves to bring about change. However, despite this willingness, the communities are still subject to the centralised approach for permissions and compliance. A group on one small brook are now beginning data collection to inform where to start digging flood control structures, yet it is unlikely they will be allowed to begin groundwork presently.

The soft, agriculturally engineered, approach that also realises aquatic resources promoted by W21, can lead to both further local empowerment, sense of community ownership and a practical means of engagement with landowners for speedy implementation. The W21 method enables community responsibility and a sense of obligation for resolving flooding. This is achieved by determining volumetric storage capacity required for control and capture of all flood water; detailing this flood storage obligation fully; then enabling disbursement throughout the catchment, on a strictly opportunity basis only amongst willing landowners wishing to implement water resource realising structures (hydropower impoundments; fisheries; water meadows; seasonal flood biomass plantations; irrigation reservoirs etc).

At one local hydropower site a recently constructed wetland (with important flood water storage capacity) hosts an important proliferation of biodiversity. Here are now found rare Water Rails, Cormorants, Greylag Geese, an abundance of fish and now apparently an otter – presently harvesting £500/week of very large carp. (Water 21)

Implementation can be severely slowed when applying large holistic catchment plans. Conflicts within groups are often dealt with internally, but when co-operating across the entire catchments, the "community" leading the project management then increases in size. Resolution of any conflict is essential if real progress is to be made (even if it is not with 'perfect' and immediate solutions). For the community to do this a wider collaborative umbrella group begins to formalise and centralise power to a small group of representative members. This risks politicisation, misrepresentation and alienation of groups. It effectively becomes another top-down body, prone to existing vested interests, the likes of which many groups originally opposed in their formation. It is already seen in some action groups with formal constitutions and funds, and will likely also be seen as the groups begin this wider collaboration stage around a catchment wide Brook Forum.

This potential hypocrisy and contradiction of principles is one reason why grassroots may not be successful at fully implementing the catchment wide complete flood management approach. To maintain their bottom-up hierarchy, they will need to clearly define aims and these have already been well defined by Sir Michael Pitt (speaking at the Critical National Infrastructure Conference, 16 April 2008):

- Start with the needs of those individuals and communities who have suffered flooding or are at risk.
- Change will only happen with strong and more effective leadership across the board.
- We must be clear about who does what.
- We must be willing to work together and share information.

Focussing on the needs of those most at risk – provides the bottom-up hierarchy.

Effective leadership – this is provided by implementation of the complete catchment hydraulic model, within the hydrograph already constructed - the 'numbers'.

Who does what – allocation of skills and services against best cost & technical competence.

Lessons for the future and conclusions from the past

A final consideration must be made to the future. It is accepted that this case study is a pathfinder, and there are no lessons that can be drawn yet from how well the community-led management lasts. However it could be agreed in principle that the environment (flooding, water quality and many of the factors in the holistic plan) continues to be looked after once the problems are solved. The lesson here comes from third world development programs. Nowadays it is undesirable for an aid organisation to give away help. Areas which continue to be well looked after into the future tend to have had a level of community involvement throughout the project, which fosters a sense of ownership, vested interest and the taking of responsibility.

The grassroots approach in the Stroud Valleys is able to emulate this framework in the developed world. What the case study of the Stroud Valleys has challenged most is the typical role of community groups as simply campaigners and lobbyists. These groups can be

empowered to initiate and deliver environmental improvement and management. Because it contributes directly in the planning and in some aspects of implementation, the communities in this sense are not *subject* to environmental management; with a holistic plan and bottom up implementation, they *are* the environmental management. This moves beyond typical analyses of self-governance (Robbins 2004) and is a lesson which needs to be tested by following through the plans. Specialised groups such as Stroud Valleys Project and Gloucestershire Wildlife Trust should wherever possible be included the development here as well as being ideally placed to provide ongoing support and any maintenance required after implementation is complete.

This case study has demonstrated the difficulties in planning from a bottom-up approach. In particular, a gradient of knowledge which translates into power cannot be assumed to be one way or another, or unchangeable. In practice, use of a common language through science (although arguably not neutral) provides a basis for collaboration, in a way that benefits both the community groups and the centralised management bodies.

The implementation of water management is much more complex. For a grassroots approach to maintain its decentralised power ethos, yet not get slowed down by internal debate, it is suggested that the community groups are not best placed to manage the implementation, but that a well informed delivery agent can work on behalf of the people. The Stroud Valleys are a pathfinding exercise in water management, and provide a unique opportunity to observe how science is translated to policy in realtime, and used to test environmental theories for the resolution of pressing problems.

References

Agrawal, A. (2005) *Environmentality: technologies of the government and the making of subjects*, Durham: Duke.

Allan, J. A. (2003) 'Integrated water resources management is more a political than a technical challenge', *Developments in Water Science*, 50, 9-23.

Bell, M. and J. Sheial (2005) 'Experts, public and the environment in the UK, *Journal of Historical Geography*, 31, 495.

Dryzek, J. S. (2005) *Politics of the earth*, Oxford: University Press.

Pretto, I. (2008) Hydraulic and Hydrological Modelling in the Slad Valley, Stroud: Water 21.

Robbins, P. (2004) *Political Ecology: critical introduction*, Blackwell: Oxford.

Stott, P. A. and S. Sullivan (2002) *Political Ecology: science, myth and power*, Hodder Arnold.

Transition Town Stroud (2009) 'Transition Towns', (WWW). (http://www.transitionstroud.org/; 1.1.09).

Vision 21 (2009) 'Mission statement', (WWW). (http://www.vision21.org.uk/index.asp?page=whatwedo; 1.1.09).

Water21 Limited is a not-for-profit company limited by guarantee

Registered Office
135 Aztec West
Bristol BS32 4UB
Registered No. 9098337 in England & Wales

http://www.water21.org.uk/contact