

The evolution of conservation and links to sustainable development and ecosystem approach.

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The Westcountry Rivers Trust is an environmental charity (Charity No: 1045806) established in 1995 to secure the preservation, protection, development and improvement of the rivers, streams, watercourses and water impoundments in the Westcountry and to advance the education of the public in the management of water.

Conservation and resource protection over the years has evolved. By and large, conservation initially took the form of 'fortress conservation' and this is still the most prevalent form in the UK. This approach requires regulation and publicly funded monitoring and maintenance and excludes communities and ignores wider socio-economic costs. The public has become disenfranchised from the subject and the objects of conservation and there is little support and some antipathy for this approach, nicknamed 'fence it and forget it' conservation. Additionally this approach delivers little more than targeted species and habitat conservation, the underlying problems which created the need to undertake conservation have not been addressed and few other environmental services are delivered to benefit society.

What followed was referred to as Community Conservation. Westcountry Rivers Trust was at the forefront of this movement in the UK. Community Conservation depended on the establishment of win-win scenarios for resource managers, in our case farmers. For example the Trust developed an extensive suite of farm advisory information sheets which described how to subtly change management, limiting costs of inputs and preventing losses. Importantly, the recommendations had an economic benefit for the farmer and ancillary benefits for the environment. These integrated conservation and social development projects were the great hope for sustainable development. Their decline in popularity stemmed from the fact that the approach only *indirectly* linked social development initiatives to conservation. As such, the outputs of community conservation initiatives were often a rise in social welfare, but an increase in the level of conservation could not be ensured.

The great hope for the future of conservation is Paid Ecosystem Service provision (PES). PES is a market-based system whereby those who benefit from ecosystem conservation transfer money to those who provide the Ecosystem Services (ES), thus creating a market where none previously existed and incentivising ecosystem protection.

Currently, for example, farmers in the Westcountry represent less than 1% of society and yet manage nearly 80% of the land. Farmers manage (for better or worse) the large proportion of many ecosystem services for society including flood defence, water supply, biodiversity, amenity, landscape value, green house gas flux and food production yet they only get paid for the food production. Given this disparity, through PES we would create a direct economic link between those who benefit from flood defence, water supply etc. etc. to encourage them to pay a hypothecated sum to the provider (the farmer) to deliver these services instead of producing food in critical areas of a catchment. For those who are slaves to alliterative aphorisms this is a seachange from Polluter Pays to the more positive model of Provider is Paid.

The whole process will be privately funded, decentralised and strategically targeted and we feel it will quickly dwarf the sum of all the 'fortress conservation areas' in the region. PES represents an improvement over other conservation strategies because payments are *conditional* on conservation, can be more easily *targeted* to critical areas or ecosystems, and create a *direct* link between conservation and the welfare of the provider. PES has become the most popular strategy

for conservation and is used extensively in both developed and developing countries and hopefully, soon in the UK.

This market based system does work as examples will show in the following text but we cannot forget that whilst acting locally we must think globally and collar and cap our ambitions to meet overarching needs of food security and global warming. We feel this is again achievable within a market based conservation system if *targeting* is based on resource protection, safeguarding ecosystem function. We think that small interconnected areas of catchments would be protected in this way utilising a tiny proportion of the space but delivering a large number and proportion of the ecosystem services required by society.

The best explanation is always in the form of an example and so what follows are two 'watery' examples of PES in action.

1) In the 1980s, a French mineral water company faced a critical problem. Nitrates and pesticides were entering the company's springs in north eastern France. Local farmers had intensified agricultural practices and cleared native vegetation that previously had filtered water before it seeped into the aquifer used by the company.

This contamination threatened the company's right to use the "natural mineral water" label under French law. In response to this business risk, they developed an incentive package for farmers to improve their agricultural practices and consequently reduce water pollution that had affected their product. For example, they provided subsidies and free technical assistance to farmers in exchange for farmers' agreement to enhance pasture management, reforest catchments, and reduce the use of agrochemicals.

2) In New York City, where the quality of drinking water had fallen below standards required by the U.S. Environmental Protection Agency (EPA), authorities opted to restore the Catskill Watershed.

Once the input of agricultural wastes and pesticides to the watershed area was reduced, natural abiotic and biotic processes were re-established, water quality improved to levels that met government standards.

The cost of this investment in natural capital was estimated between \$1-1.5 billion, which contrasted dramatically with the estimated \$6-8 billion cost of constructing a water filtration plant plus the \$300 million annual running costs. This is an example of paying for the ecosystem service of water purification (many ancillary services are also improved).