

BIODIVERSITY LECTURE

The wider world and that is what I want to focus on. I do want to remind you, because I think the point is very essential of what is Biodiversity very quickly what does it mean and then particularly to dwell on how does biodiversity help to achieve sustainable development. What action should we take in addition to what is being done already, noting what Michael has quite correctly said that there is a lot going on, and what might it mean in practice by taking the example of a river basin.

What is Biodiversity?

Well of course it is individual species and everybody recognises that, but this is not enough, it is more, it is the species together and yet it is much more than as well. It is the species and their habitats but it is actually much more than that as well. It is the habitats and the their ecosystem, but again it is more than that because it is also the biological processes. If we think it stops at either one of any of these levels before we get to the whole system and the whole processes, then I am afraid that we have got it wrong and we have got to convince biologists, nature conservationists, NGOs as well as others that it is the whole system. The signature is there in the convention on biological diversity, ratified by 160 countries or so, almost a decade ago now but we are still focusing on the upper level. If we are going to get the biodiversity bang for sustainable development we have got to look at the totality.

So what therefore does it mean? I really like this quotation, not from an environment department but from the UK government's department for International Development. Biodiversity is nature's wealth of variety of life in all its many forms, from the smallest microbe to the largest mammal, from individual genes to complex ecosystems. All life is characterised by variety. But the thing that I want to place stress on is where we get into, as Michael left off, the pest resistant crop or the new medical cure and the connection, particularly with people. Biodiversity includes people too, they are part of the natural world, we have to accept that. If we seek to avoid that point, then I am afraid that we are living in the proverbial cloud cuckoo land.

So what does biodiversity mean?

I think there is an essential link with people. People are part of biodiversity. We cannot say that human society is separate from the natural world. In Scotland that has not been the case for the last 7000 or 8000 years and in other parts of the world for many millions of years. It is very clear to me and I hope to you, that society and biodiversity are inter-dependent, that also biodiversity is one of society's capital assets and that biodiversity can be used for human benefit. But in saying that, we have to recognise that we are dealing with natural systems and processes. So there are some limitations, we use nature's resources within their natural limits. There are a lot of things under that particular statement, the carrying capacity of river systems, of the air, the soil etc.

We seek to understand natural processes, it never ceases to surprise me, given my own training, that there is still a lot we do not know about natural processes so that when we as specialist advisors to government come to advise, we are not quite sure always of the impact on the process, and therefore the workings of the system as opposed to the impact on a particular species or maybe on a particular habitat. And that is why it is very important from an SNH point of view that we continue to have formative research and technical support programmes to investigate that. Our own new strategy is vitally important there. We also seek to understand the changes which I would say destabilise natural processes whether they are human or sometimes, of course, they are natural themselves because we do get the flip changes.

So let's think quite hard now, about what biodiversity can do to help achieve sustainable development. Why should we be thinking of that? Well it is part of the Rio package, so there is the international dimension. More locally, of course, our Minister has given us a challenge and the Scottish Biodiversity Group a challenge and Michael has referred to the speech that Sarah Boyack did at Battleby earlier this year. I want to focus on this particular quote. "Tackling social issues, environmental issues and the economy separately does not deliver sustainable development. The joined up approach does". Picking of the three biodiversity principles, that is the ones that Michael mentioned earlier. One by one may have the same difficulties. So

the Minister is saying quite categorically “I am therefore asking for real new thinking” there is the challenge to us. What will make a reality of biodiversity? Do we need to add anything to our programme for sustainable development and on that I am going to argue that we do need to add quite a lot of things in addition to what we are doing already. What will embed biodiversity in our political, economic and social culture? and I want to address those points as well.

So there is the challenge, how are we going to meet it? Well lets not look at biodiversity first, lets actually look at sustainable development. The governments last year, at the UK level, published its strategy for sustainable development. It is not widely known in Scotland this, there seems to be some attempt, not yet in the public field to tartanise it perhaps, but Scotland is part of the UK, the UK is part of Europe, Europe part of the World and the UK is the right level to look at these sorts of issues and the establishment of a new commission on sustainable development, I am sure, is the right approach. So this is the signature coming from government that sustainable development is about social progress and social equality. Now you may think that that is an issue for the developing countries but it is very much an issue, I would argue, for the UK and of course for Scotland as well. The inequalities within urban society and within rural society and perhaps between the two as well.

It also uses the phrase the effective protection of the environment. I would argue that that is not a negative line at all, we are talking about trying to maintain systems and processes of the environment rather than the static elements. It also talked about the prudent use of natural resources. I suppose that is another way of saying the sustainable use of natural resources, taken from the convention itself. It also talked quite legitimately about maintaining high and stable levels of economic growth and employment. These are not of course separates, they are not in separate boxes, they need to be together. I have been reflecting over the past few days having read some of the Reith lectures and hearing the Prince of Wales that, well maybe there is another 8 which is rather wider than this and that is respecting the environment for its own sake, if you like the ethical and moral considerations. So I am going to use these (fiveatons) as, if you like, the sustainable development challenge for what we are doing on biodiversity in Scotland and what I hope we should do.

I hope that you are convinced like I am, that biodiversity helps to achieve sustainable development and I am very briefly going to go through a number of things. The services provided by nature, ecosystem services, the sustainable use of biological resources, the use and equitable sharing of genetic resources, the importance of nature and natural processes in their own right, the value of individual species, the importance of species and habitats and the benefits of protected areas of biodiversity. So lets look at each of those in turn.

To me the ecosystem within which species and habitats and that includes the human species, this is actually vitally important. It is very simple, isn't it in the generality that we have got a whole series of inputs, we have the processes of production and consumption and we have then a series of outputs. The outputs are obviously things on which society as a whole and we as individuals have a tremendous dependence. So to argue that the services from the environment are critical to human wellbeing seems to be self evident, and yet I do not think that argument has been accepted sufficiently. Some interesting work was done by Americans trying to get some measure, globally, of the value of these so called ecosystem services. One of our colleagues, Alastair Lavery in RSPB has had an attempt to use that methodology in a Scottish context.

I cannot claim that we could validate some of this, but if the scale of the figures about the benefits if you use a method developed by Americans, the value in 1994 of the coastal ecosystem being sure estuaries and continental shelf of Scotland is of the order of £74b. Doesn't that begin to shake you a little. It ought to shake politicians as well. Compare it, for instance, with a Scottish Executive budget of £17b, we are talking big numbers here. Whether the numbers are precisely right or not, is really irrelevant, it is order of magnitude. The environment is vitally important and if you add all of these together, Alastair comes to a figure of over £80b sterling at 1994 prices. So that is an immense contribution to this new economy, not just the economy of tartan chips etc but the wider economy of the environment.

So in a sense the challenge here is to say, right when we are looking at things like gross domestic product at the Scottish level, or at the United Kingdom level, we need

a totally different approach that we are not just using the normal economic measures, we are using environmental measures in inputting those to make sure that these are valid in the whole decision making process. We have not got there yet, some interesting work is being done people like Nick Hanley at Edinburgh University who gave an excellent presentation on these issues at our joint Conference with the Royal Society of Edinburgh recently, showing that you can put numbers on critical environmental processes