BIODIVERSITY RESEARCH,
an answer to societal issues

SCRIPT of the video "*Biodiversity Research, an answer to societal issues*"

One of the main reasons why we are studying biodiversity is that humans are having a large impact on biodiversity and biodiversity on society. And that means that we need to understand why humans are doing what they are in terms of their impacts on biodiversity, and how and when we need to fix it. Those aren't questions that ecologists can answer, those aren't questions that evolutionary biologists can answer, those are questions that only economists and social scientists can answer to. So, there is a real need to have integrative research in which we bring people from all kinds of fields: agronomists, social scientists, climate scientists, evolutionary biologists, psychologists, together so that we can answer those in a way that makes them relevant for policy making, make them relevant for people who manage natural resources.

(Dr Paul Leadley, Chair of DIVERSITAS bioDISCOVERY Scientific Committee and Professor at the University of Paris, France)

In the case of the water crisis, we know already that wetland ecosystems for example, have a very important role in controlling the production of water, the storage of water, and certainly the purification of water. What we don't know enough about is the precise interactions from the whole range of biodiversity that you find on a wetland (from the genetic composition, the species composition to ecosystem changes). That research, coupled with hydrology can actually both improve knowledge of what's happening in the water resource in a physical sense and what the biodiversity, the wetlands system if you like, are doing to the water system, the hydrology that's producing the water. Neither hydrology, nor biodiversity research on its own, can provide the full answer, but once we start working together, those disciplines together, then we can start getting a much better idea.

(Dr Peter Bridgewater, Chair of the UK Joint Nature Conservation Committee (JNCC), United Kingdom)

There is a good example from France. Around one of the major water sources in France, it's called *Vittel*. Actually their water, that they were extracting and selling was getting more and more polluted in nitrates. Almost to the point where they actually had to clean the water before they could sell it because it was so high in nitrates. And the fix to the problem wasn't a technological problem, it wasn't scrubbing the nitrates out of the water, it was putting biodiversity back into the landscapes, making sure that pastures were there instead of corn fields, making sure to put back trees along the streams. And actually, the *Vittel* company was ready to pay for that because Nature and biodiversity were providing the services they needed, that they would have had to pay for else wise through technological fixes.

(Dr Paul Leadley, Chair of DIVERSITAS bioDISCOVERY Scientific Committee and Professor at the University of Paris, France)

If you look into health issues globally, about 3/4 of all global mobility is associated with what is called environmental diseases, in other words, diseases which have a strong link to the natural environment.
And one of the great emerging areas is these noble diseases, which suddenly appear. SARS is a good example, AVN flu, AIDS itself is another example where these new diseases popping up for which we have no immediate way of controlling them, and with the great connectedness around the world, of course they spread like wildfire and so that's an area of direct engagement of biodiversity. Often there are elements of biodiversity themselves, but what's happening is that they are switching out of their previous hosts into humans, or else they'll be evicted by biodiversity. So understanding those connections is critically important. And that's just one example.

(Dr Robert Scholes, Chair of GEOBON Scientific Committee and Council for Scientific and Industrial Research, South Africa)

Most of the global environmental problems are multidimensional, like effects of climate change. This is a multi-dimensional problem. You need to know about the carbon stocks, both whether they are decreasing or increasing, and how we can increase them. You need to know what is going to happen to the composition of ecosystems with climate change.
For example, whether the Amazon will die back or not, which is a hugely important problem for whole humanity, depends on many things. It depends on how the climate is going to be, how the land use encroaching is going to be, but also it depends on understanding what are the species doing. Because depending on what species do consider or do not consider, you get adaptation to climate change, so they may not be so much forests die back. Or you have massive die back with the whole collapse of the Amazonian forest, and its replacement in savanna. So if you don't look at biodiversity, you don't have the answer to your urgent problems. So I think that biodiversity should be considered as an important aspect, a priority aspect in all these environmental problems we have.

(Dr Sandra Diaz, DIVERSITAS Scientific Committee and Professor at the National University of Cordoba and CONICET, Argentina)

I'm coordinating a project in which we are looking at the impact of climate change possibly on forests in France. And what we are doing is that we are taking a number of models and seeing how, we predict how forests might look like in 2050 as impacted by climate change. What they show is that there are large areas in France in which many key species, like beech or some important pine species or even oak species may actually disappear from those areas, die back from those areas, because of climate change.

And understanding that response of these species to climate change is actually helping foresters decide how they are going to manage their forests, maybe even replace a lot of

those species, with more drought and heat tolerant species that can handle climate change. So that's one example of the kind of things that we can do.

(Dr Paul Leadley, Chair of DIVERSITAS bioDISCOVERY Scientific Committee and Professor at the University of Paris, France)

I can give you an example from my own country [South-Africa] where we have a major poverty relief programme, called "Working for Water" where instead of simply dishing out government money to the unemployed, we have a programme of work where people work on restoring biodiversity in catchments, that's water catchments, which is impacted by alien vegetation. So it's a double win, in fact, it's more than a double win because we support biodiversity in many of these in fabulously rich areas; but it's also creating employment, and more importantly it's creating skills. It's training people who would otherwise not have the skills to be employable, to give them some experience, and so that's been a great success.

(Dr Robert Scholes, Chair of GEOBON Scientific Committee and Council for Scientific and Industrial Research, South Africa)

So i think there are a lot of things that biodiversity is bringing to the table that can be useful for decision-making.

(Dr Paul Leadley, Chair of DIVERSITAS bioDISCOVERY Scientific Committee and Professor at the University of Paris, France)

The video *«Biodiversity Research, an answer to societal issues»* is available online at:
http://vimeo.com/41875844

Video produced in May 2012 by the Belgian Biodiversity Platform for the European Platform for Biodiversity Research Strategy (EPBRS).

For more information, please contact Estelle Balian, Science Officer for the Belgian Biodiversity Platform and Secretariat of the European Platform for Biodiversity Research Strategy : e.balian@biodiversity.be