

## Report of the Working Group on Biodiversity

1996-09-26

The report of the Biodiversity Working Group or BWG has already been circulated to council members in advance of these meetings and I hope all of you who are interested will have read it. I will give here only a brief summary of the report and then give a little more detail about the main current project of the working group. I would also like to draw your attention to the fact that the working group has set up a display area in the hotel where those who wish to see more of what we are doing can view reports, maps and other details there.

### Four-year programme of BWG

The Biodiversity Working Group has completed about 4 years of studies and deliberations on a wide range of issues relating to biodiversity. These have included such items as in-situ conservation in protected areas; ex-situ conservation in zoos, botanical gardens and captive breeding programmes; the overall status of species and habitats in China (mainly terrestrial and freshwater but with some attention also to marine ecosystems); levels of wildlife trade and utilisation; reviewing the current policy and legislation on biodiversity and reviewing the long-term strategies and action plans that have been developed for biodiversity conservation in China.

The main conclusions from our work have been that a) China is phenomenally rich in biological resources for a largely temperate country (we have presented details of this richness in our earlier reports but China is the richest temperate country and among the top five countries globally in terms of species richness); b) that these riches are being lost and destroyed at an alarming and not fully appreciated rate; c) that loss of these resources is going to have serious economic impacts of China's immediate and long-term development; and d) that those few people in China who see the seriousness of this situation are in a weak position to affect the policies and programmes that would be needed to remedy the situation, China's biodiversity cannot be repaired or rebuilt, Artificial forests and landscapes neither preserve the species wealth nor the ecological functions of original forests, China's original biodiversity will have to be saved before it is too late, This is feasible and affordable but it will certainly require a higher level of attention than it currently receives in the overall development process in China. At the root of all the problems is the widespread lack of understanding of the real values of biodiversity even among technical agencies responsible for its protection and particularly at the local level where most land-use decisions are made.

### Current Projects

As a result of these conclusions the working group has focussed its activities in to three main channels: 1) calculating and demonstrating the economic benefits of biodiversity and the ecological services that natural habitats supply to other sectors; 2) developing a better database system so that the distribution of biodiversity can be better analysed against the geographical patterns of habitat loss and development of protected areas and 3) developing direct dialogue between the working group and the responsible ministries in charge of using and saving China's biodiversity.

At the last council meeting of CCICED in Beijing, the biodiversity working group reported on an attempt to cost the various ways in which biodiversity and natural habitats in China contribute to the national and global economies, The total of harvested products and services was a massive 255-410 \$ billion, The greatest components of this were carbon sequestration and watershed protection. Natural forests were the most valuable habitat type and their overall contribution is far greater than the value of the standing timber. Since our report another team of experts have tried to calculate the value of biodiversity in China and have come up with figures slightly greater than our own UNEP Country Study for China (1996).

During the current year, the working group has focused down to examine one specific catchment area in Xingshan and Shennongjia counties of Hubei Province, in an attempt to accurately assess the contribution of forest in terms of its direct products, uses and potential uses for tourism, indirect benefits to agriculture and local welfare and indirect contribution to realised and potential hydropower. A GIS (Geographical Information System) model of the study area has been developed with different coverages for the topography, rainfall, slope classes, soil types and current land-use or cover. Using this model we are able to evaluate the value of forests in containing soil erosion and landslides and in providing clean water throughout the year. By varying the model we can predict what will happen under various different land-use policies. Field surveys have made spot measurements of erosion rates and water retention in 30 sample plots in different land classes plus measurements of water flow in sub-catchments.

The value of a water supply is vastly increased if the peaks of flood and drought can be limited and the supply is as constant as possible. It is difficult to utilise efficiently a seasonal abundance of electricity if for half the year the turbines are switched off, and that in the colder months when demand for power is greatest. Our preliminary findings indicate that within this study area the potential changes in forest cover will affect the potential revenues from hydropower by vastly more than the total living costs and current productivity of the regional population.

The case study is significant because this lies within the catchment area of the 3 Gorges dam project and more than half the human population in the study area will soon be flooded and have to be relocated. Our preliminary findings challenge the current plan to develop new orchards (at the expense of forest cover) as the best way to accommodate the people concerned. Agriculture has already opened up dangerously steep slopes beyond any sensible limits. On the contrary existing forests should be closed to improve their water holding "sponge effect" which will increase hydropower production by more than enough to rehouse and subsidize the population who can then be gradually absorbed by the new industries that can be developed with the electricity. Provision of cheap electricity to local residents to reduce their dependence on wood fuel will permit the closing of more forest and scrub. There is a major opportunity in this area to demonstrate that the controversial 3 Gorges dam can take pressure off an area of high biodiversity value and improve the environment of this region rather than have a negative impact.

Due to delays in fund supply, our study started rather late in the year and is still not finished. I hope we shall have a preliminary report before the end of the year and a final report can be presented early next year. Next year we intend to broaden the scope of the project to include two new study areas—one in subalpine forest systems of high touristic and biodiversity value in Sichuan and another in the grasslands of Qinghai—all within the catchment of the 3 Gorges project.

With regards the development of a biodiversity database, a sophisticated and complex system called BEMS (Biodiversity Information Management System) has been installed in the Institute of Zoology of CAS and adapted to work in both English and Chinese languages. The system requires a GIS habitat background against which species distributions, details of status and boundaries of protected areas can be analysed. The GIS cover is still being developed in collaboration with the Institute of Botany. More work will be undertaken during the next 12 months to get the programme fully functioning and to develop data exchange protocols with such other biodiversity databases in China as are already being developed by Ministry of Forestry, Institute of Botany, Institute of Geography and regional centers such as Kunming Institute of Zoology and international programmes such as GRID and WCMC. It is very important to promote data exchange. There is an unhealthy tendency in China of data (often collected at the government's expense) to be hoarded and traded as a commercial commodity.

Over the four years, the working group has made more than 100 specific recommendations for improving the conservation of biodiversity in our various reports to this council. We have felt a lack of feedback as to whether our recommendations are being accepted or acted upon by the relevant ministries. This year the working group held direct meetings with Ministry of Forestry, NEPA, Ministry of Agriculture, Ministry of Sea Production and State Planning Committee. It was felt that these were very useful meetings. The joint conclusions reached in each meeting are contained within the group report. Some of these mark major progress in translating our recommendations into policy in China.

#### Plans for the Future

The group members have outlined their feelings for the future in the group report. They wish to change some aspects of group structure and topics of investigation but generally feel that biodiversity is a huge and important area that must be included in any future CCICED works programme. Indeed we feel there is room for two biodiversity working groups to tackle different aspects of this subject.

#### Acknowledgements:

The working group wish to express their thanks to CCICED for the privilege of serving the council and wish to thank the CCICED support

programme in Canada for giving financial support to allow our current activities to get underway this year .The group is very appreciative to the European Union for a grant to support our activities. There have been many delays in getting this grant up and running but the funding is now secure and the working group is now able to continue its current activities for another 18 months.

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