BIODIVERSITY CONVENTION BRIEFINGS No. 3

UNEP Expert Panel Calls for Biosafety Protocol under Biodiversity Convention

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AN expert panel set up by the UN Environment Programme has recommended that a protocol on biosafety be introduced under the Biodiversity Convention in order to deal with the risks posed by the new biotechnologies to the environment. The panel's report is expected to be one of the most significant and controversial items to be discussed at the forthcoming session of the Convention in Geneva starting mid-October, 1993.

The panel, by a majority opinion, concluded that there is a need for a legally binding international protocol on the safe transfer, handling and use of living modified organisms resulting from biotechnology. The aim of the protocol would be to address concerns over the risks posed by genetic engineering to the environment, in particular in causing adverse effects on the conservation and sustainable use of biological diversity.

Co-chaired by Veit Koester, head of the Danish Environment Ministry's forest and nature agency, and Tewolde Egziabher, conservation strategy director of the National Herbarium of Ethiopia, the panel comprised 33 scientists and senior governmental and inter-governmental officials in their personal capacity. It met three times between December 1992 and March 1993. Besides Denmark and Ethiopia, panel members were from Austria, Bangladesh, the EEC, Norway, Peru, Romania, Spain, Tanzania, Thailand, the USA, Venezuela, and organisational representatives from the OECD, UNIDO, UNEP, the Research Foundation for Science, Technology and Natural Resources Policy (India), European Environmental Bureau and the IBPGR (International Board for Plant Genetic Resources). The panel was one of four expert groups set up by UNEP to prepare reports on outstanding issues for the intergovernmental committee of the Biodiversity Convention.

A minority of panel members did not agree that a protocol was necessary, and their views are also set out in the report. The report notes that the terms "majority" and "minority" did not imply that voting took place but simply reflected the fact that "one or two" panel members disagreed with most of the conclusions and recommendations.

According to reliable sources, there was near unanimity among panel members on the need for a protocol as well as on its scope and contents. However, panel members from the United States and the OECD secretariat disagreed with the need for a protocol. In particular, the US member, a legal staff with the Environmental Protection Agency, did not think that, with the present state of knowledge, the risk posed by biotechnology was serious enough to warrant a protocol now.

The issue of biosafety in general, and the need for an international protocol in particular, was one of the most contentious points of negotiations in the formulation of the Biodiversity Convention document (finalised in May 1992) and of Chapter 16 (dealing with biotechnology) of Agenda 21, the action plan adopted at the UN Conference on Environment and Development in June 1992. Some Third World countries, supported by a number of European countries, insisted that biosafety be a major component of the Biodiversity Convention and that a protocol or code of conduct be established to prevent risks arising from biotechnology, and particularly the potential dangers of transferring projects or products of genetic engineering to the South.

At both the Convention and the UNCED meetings, some Northern countries, and in particular the United States, counter-argued that there was no hard evidence of risks to the environment or to health, and thus there was no need for a code or protocol. As a compromise, a resolution was included in the Convention document that "the parties shall consider the need for and modalities of a protocol setting out appropriate procedures... in the field of safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity."

The task of the expert panel was thus to examine the need for a protocol, and suggest its modalities, and provide recommendations to the parties to the Convention, who will make a final decision on the establishment of the protocol.

THE PRECAUTIONARY APPROACH

The expert panel's report, completed at the end of April, 1993 and recently made available here, concludes that a majority of the panel agreed that international cooperation in the field of biotechnology and biosafety could best be served by the adoption of a legally binding instrument under the framework of the Biodiversity Convention. Existing international agreements in this area do not meet the requirements as they are either non-binding or inadequate in scope of application.

According to the report, biotechnology is a new and expanding technology with very useful applications. "But from an environmental point of view, the development and application of biotechnology can be compared to that of other new technologies: the useful applications are outweighed by adverse environmental impacts if the technology is not applied safely," it said.

It is well known that new technologies often have not been safely applied until the environmental damage has occurred, the report added. The sins of the past and increased environmental awareness had led to a general acceptance of the "precautionary approach", as referred to in Principle 16 of the Rio Declaration (signed by over a hundred heads of governments at UNCED).

(The precautionary approach adopts the operational principle that action should be taken to protect the environment if there is sufficient grounds for believing a threat is imminent, even if the scientific evidence regarding the threat is not yet conclusive).

The report noted that many countries have already applied the precautionary approach in the field of biotechnology by adopting safety regulations to avoid harmful effects on the environment and on human health, but these were mostly developed countries.

WHY DEVELOPING COUNTRIES MOST NEED A PROTOCOL

Indeed, a detailed reading of the report leads to the conclusion that developing countries would be much more exposed to the risks of biotechnology, and that they are most in need of a biosafety protocol to protect their environmental and socio-economic interests. Different parts of the report give pointers to the position and needs of developing countries:

* As noted above, most developing countries have not yet introduced safety regulations relating to biotechnology (para 23).

* There is the danger of the export of hazardous biotechnology products to the South. Noting that dangerous chemicals and pesticides banned or severely restricted in developed countries had been exported to developing countries with adverse effects before international control procedures were adopted, the report said that "a situation where genetically modified organisms (GMOs) which have not been approved in the countries of origin are being exported to and released in developing countries could well occur if similar international control procedures in this field are not in place." (para 31).

* The risk from GMOs increases in the tropical countries. This is due to the higher diversity of wild species and the higher possibility of survival of GMOs (that escape out of their contained environment) in the tropical temperature. At the same time, the capacity to deal with GMOs decreases in the tropics, where the least developed countries are concentrated.

"Northern enterprises may therefore find it convenient to carry out their developmental work and to undertake production using GMOs under less scrutiny in Southern countries through their branches or subsidiaries," the report noted. "There is, therefore, a need to monitor the development and use of GMOs at the global level. When abuse or accidental damage occurs, there is need for determining liability and exacting compensation both to pre-empt it and to enable correcting measures." (paras 101-104).

* Developing countries are more likely to absorb negative socio-economic impacts. The report said: "The conservation and sustainable use of biological diversity, especially in the case of domesticated plants and animals, is dependent on the socio- economic conditions of the people who have been maintaining it. It is, therefore, essential that the socio-economic risks posed by the use of GMOs be evaluated and that any

probable adverse effects be mitigated."

It added that the risks would arise when a country replaced its traditional imports (of agricultural products) by producing them at home through biotechnology (and the use of GMOs). This would affect the traditional exporters (mainly in Southern countries) adversely, and also cause the discontinuation of agricultural systems and a resulting genetic erosion. "When the use of a GMO is not clearly seen to offer an advantage, it would make sense that the traditional technologies and systems continue," concluded the report. (paras 85-86).

NEED FOR AND SCOPE OF PROTOCOL

The majority of the panel's members recommended that a legally binding protocol on biosafety be adopted. The framework of the protocol should take into account various needs, including procedures for internationally-accepted risk assessment and risk management; information exchange and research; informed public participation in decision-making; assistance from countries with a high level of experience; and national capacity building.

On the scope of the protocol, the panel proposed the organisms covered should be restricted to genetically modified organisms, defined along EEC lines as "organisms in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination." Thus, organisms modified by traditional breeding techniques are to be excluded from the protocol.

Whilst the main focus of the protocol should be on the deliberate releases of organisms, the panel said the protocol should also cover the prevention of unintended releases of GMOs from contained conditions (such as in research laboratories). The report noted that the contained use of modified organisms is in general of little risk to the environment (although it may have potential adverse impact on human health). However, containment does not prevent some organisms from entering the environment, causing unintended harmful effects.

On the health aspects of biotechnology impacts, the panel noted that its mandate was to only cover the environmental impact and that the inclusion of health considerations in a broad sense (for example, including all aspects of worker protection, food safety, etc.) would go beyond the mandate. It agreed on the other hand that health is essential for biodiversity conservation and sustainable use. Thus, "possible adverse effect on human health posed by deliberate or accidental release of GMOs into the environment should be covered as they are natural elements in risk assessment and risk management procedures," it concluded.

A majority of the panel also agreed that domestic safety regulation should be covered by the protocol as it would encourage countries which do not yet have national safety regulations to adopt such regulations, and there would also be some harmonisation of national safety procedures. However the protocol should also allow for some flexibility in treating domestic regulation.

MODALITIES OF PROTOCOL

The panel proposed that the protocol adopt the principle of advance informed agreement (AIA), and in doing so follow the prior informed consent (PIC) procedures as contained in the Basel Convention on the Movements of Hazardous Wastes.

The PIC procedure emphasises shared responsibility of importing and exporting states. States must ensure that PIC is obtained for any export; and transit and importing states exercise sovereignty over their territories when they make the import or transit dependent on their consent, given in advance.

In applying the AIA procedure to organisms under contained use, the panel proposed that the procedure be fully applied to the transfer of GMOs for large scale production. This is because large scale production using GMOs under contained conditions could in some cases produced modified organisms in such quantities that they may survive, disseminate and have adverse environmental effects if they are released by waste- streams or accident. On the other hand, organisms to be transferred and used only under contained conditions in research should be covered by a simplified (and not the normal) AIA procedure.

MINORITY VIEWS

A minority of panel members disagreed there was presently a need for a biosafety protocol. According to their arguments, there is no scientific evidence linking the specific techniques of modern technology in biotechnology to adverse impact on biodiversity, still less to quantifying such speculative risks. A protocol

would, for no clear purpose, divert resources from higher priority needs and delay the diffusion on techniques beneficial to biodiversity, health and sustainable agriculture. They also argued that it would take considerable time to finalise a binding protocol involving complex issues. A protocol would be costly in resources, inevitably outdated (as biotechnology techniques are developing rapidly) and might thus impede access to technology for no corresponding benefit to biodiversity. According to the minority view, the targeting of biotechnology by an international protocol "stigmatises the techniques and increases public concerns, hence diverting resources, political attention and delaying innovative and beneficial developments". There also already exist many arrangements for overseeing the trade of biological materials, and the Biodiversity Convention is not the proper forum to deal with biosafety issues.

CONCLUSIONS

The panel report is so far the most developed proposal for introducing some international regulation over the use and transfer of genetically engineered products and processes of biotechnology. As the biotechnology industry is fast developing, and as public awareness of its potential hazards increases in Northern countries, there will be attempts by biotechnology research centres and private firms to shift research and trials and the use of products to the South. There is thus an urgent need to seriously consider the panel report's findings, and to discuss it at the Biodiversity Convention.

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