GENETICALLY MODIFIED ORGANISMS

WWF's mission is to conserve nature and ecological processes, and to address this in a way which benefits human needs and livelihoods. WWF therefore recognizes the potential value to society arising from the new opportunities provided by the developing science of Genetically Modified Organisms (GMOs), especially for medical application. However, WWF is concerned about the potential dangers involved in releasing GMOs into the general environment through agriculture.

The natural evolution of biodiversity is an ongoing process which has taken place for a few billion years. It has involved natural selection, the interactions between species and the development of the niche of each species leading to communities of different species of plants and animals with interrelated roles and dependencies. Evolution ensures that each species optimizes its "fit" within the broader community of organisms where it occurs. Different species are adapted to different conditions. Some are very sensitive to minor changes in these conditions, or competition from other species. The adaptability of a species depends on genetic diversity. Intensive "breeding", as in GMOs, involves artificial selection of desired traits, which results in a great reduction of genetic diversity.

The introduction of new species, or alien genetic material, can trigger changes in species' adaptability and relationships, altering the natural balance and affecting established ecosystem processes which are essential to a stable environment. Natural systems are losing biodiversity, and hence genetic material, at a higher rate than ever before. The release or escape of GMOs into the general environment further threatens the declining natural resource.

A major cause of biodiversity loss over recent decades has been the intensification and extensification of agricultural production of a few crop species. WWF has addressed this through work with communities and agencies to identify more sustainable production methods. The application of GMO technology to agricultural crops and animal breeding may bring short-term opportunities but is also a threat to sustainable agriculture and biodiversity. Release of GMOs into the general environment takes place through genetically modified crops or release and escape of farm animals, including fish.

Position Statement

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The use of genetically modified crops for insect pest or drought tolerance, may bring some benefits in some areas, but it can bring negative impacts on ecological processes and the ecological sustainability of agriculture, and on economic and social factors. For instance, where crops are modified to tolerate herbicides, chemicals are often used more freely; insect resistance in plants can lead to the death of beneficial insects on contact with these crops. Other effects include transfer of resistance to wild species which can then become pests and increase damage to other crops. This can in turn impact on the viability of sustainable subsistence farming through a shrinking genetic base, increased vulnerability, increased dependence on capital-intensive inputs, and concentration of market power and intellectual property rights.

WWF Position Statement

The development of GMOs is much more than a greatly accelerated form of microbial, plant and animal breeding which relies on natural reproductive processes. It can create novel life forms and has the potential to do so at a rate unparalleled in Earth's history, and in a manner not controlled by, or within the reach of, natural selection. Conventional breeding produces new strains of organisms, some of which may affect native wildlife. In contrast, GMO techniques, which involve incorporating new combinations of genes into crops and livestock, can bring greater risk to biodiversity through impact on ecological interdependencies. Associated changes in land use and management can also have an impact. In addition, widespread use of GMOs will increase depletion of natural intraspecific genetic variation – that is, reducing the genetic variability in biodiversity. This in turn may adversely affect species "fitness".

These issues are further spelt out in "Background Paper on the need for a Biosafety Protocol as part of the Convention on Biological Diversity" (WWF International, 1995).

For the present, WWF wishes to see a strong precautionary approach to the use and release (or escape) of GMOs into the wild. The science is still very new and it is apparent that much ecological research needs to be done before this technology moves from the laboratory into standard practice.

WWF seeks:

- a moratorium on use or release of GMOs into the general environment until ecological interactions are fully researched and safeguards put in place;

- transparent, comprehensive environmental impact assessment of planned releases into the environment, to include consideration of the impacts of changing crop management practices, as well as the invasion of natural and semi-natural habitats or competitive displacement of native species by transgenic plants and animals;

- avoidance of additional impacts through genetic modifications which:
  - facilitate or stimulate greater use of chemicals;
  - harm pest controlling and other locally beneficial insects associated with crops;
  - lack safeguards against gene flow into native organisms;
  - use artificially constructed genes (whose effects are harder to predict and control);

- Control of gene technology, including government regulation and the establishment of independent statutory authorities, scientific and community assessment, and effective monitoring of the use and spread of GMOs, including effects on different habitats and species, and on human health and livelihoods;

- Recognition of the role of traditional knowledge in crop breeding and appropriate benefit sharing.

WWF will:

- alert governments, aid agencies, industry and the public to both good and bad practices as it impacts on WWF's mission to protect and enhance the environment and sustainable livelihoods;

- upport moratoria on the use and release of GMOs in crops until there is wide consensus that research on ecological impacts has been completed and evaluated, and risks identified to being acceptably low;

- support calls for ecolabelling to promote consumer awareness and informed decision-taking.