

IN-SITU, EX-SITU: FORGETTING THE FARMERS?



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This briefing on the Convention on Biological Diversity was drawn up by Genetic Resources Action International (GRAIN) for the second intergovernmental meeting on the Convention, held in Nairobi from 20 June to 1 July 1994. It is meant to stimulate discussion on important issues related to the Convention. It consists of 4 parts. This is part 3.

Summary

Farmers and rural communities have been the stewards of biodiversity since time immemorial. From our hunter-gatherer origins on through the invention of agriculture, people have domesticated, diversified, nurtured, conserved and made available a wealth of valuable species and varieties. Since the past few centuries, they have increasingly been marginalized in this role. Governmental actions to promote nature parks and genebanks as the solution to the extinction of biodiversity overshadow and overtake the efforts of local people.

To a large extent, the Convention follows this logic of increased government control over and centralisation of conservation efforts. It puts major emphasis on in-situ conservation in the form of the establishment of protected areas. Secondary emphasis goes to ex-situ conservation — genebanks and botanical gardens. Although the Convention does include in its in-situ definition the domesticated and cultivated species, no equal footing is given to the conservation of them, nor to the rights and role of local communities the develop and conserve them.

As part of its commitment to foment more in-situ and ex-situ conservation, the Convention lays down rules on access to genetic resources — in the bank or in the field. These rules stress national sovereignty, the need for prior informed consent and mutual agreement. However, these rules do not extend to any of the current ex-situ collections. This condemns 4.35 million collected seed samples — the basis of food security — to the laws of the jungle and the risk of embezzlement.

Recommendations

- ⇒ the Parties to the Convention should — according to its spirit, its Resolution 3, and Agenda 21 — innovate a mechanism to ensure the sustainable conservation and fair access to the ex-situ collections existing prior to the entry into force of the Convention.
- ⇒ FAO and the CGIAR must be encouraged to come to a long-lasting and effective agreement on trusteeship for the ex-situ collections currently housed by the IARCs.
- ⇒ the concept of “country of origin” of collections held under in-situ or ex-situ conditions should be firmly linked to a mechanism for sharing the benefits from biodiversity. Further, benefits must go to local communities and not just government coffers.
- ⇒ parties to the Convention should recognise, protect and support the future development of on-farm genetic resources management as a specific approach to conservation-through-use in its own right

The long term conservation of biological diversity, especially for food and agriculture, is one of the most important tasks we have before us to ensure the livelihoods of our own and many future generations to come. How to go about it, though, is a question of strategy and choice — decisions which have important technical, political and socio-economic implications. A principal objective of the Convention on Biological Diversity is to promote the conservation and sustainable use of biological diversity. However, only two traditional approaches — in-situ and ex-situ conservation — are stressed by the Convention. Each of them has its rationale, merits, social consequences and costs. And both of them historically depend on centralisation of resources and decision-making. A third, more decentralised and people-oriented approach has to be given equal footing and support. The Convention does provide elements to do this, but only if specific action is taken by those who have to put the Convention to work.

In-situ: parks and panda bears

The Biodiversity Convention is fundamentally rooted in an in-situ conservation mindset. In-situ — or “on site” — conservation is basically directed at preserving the dynamics of whole ecosystems (such as tropical rainforests or mangroves) and/or species. The method employed is to isolate zones of particular “natural” diversity from society, basically in the form of protected areas (national parks, nature reserves, etc.). In 1985, some 2,000 protected areas were registered in the world covering 4 million square kilometres. In 1993, there were close to 8,500 major protected areas in the world, many of them in the developing countries. Protected areas now exist in almost 170 countries, covering 7.7 million square kilometres — almost the size of Egypt — or some 5.2% of the earth’s land area.

The major drawback of the current in-situ approach is that local people who depend on access to or interaction with the diversity zone in question are pretty much left out of the scheme. Their role in conserving, managing and using wildlife is ceased or relegated to the terrain of nearby “buffer zones”. A recent review of protected area conservation approaches shows that there are numerous examples of local communities being expelled from their settlements (in to-be-protected zones) without adequate provision for alternative means

of work and income. Apart from the impact on people of this approach, its impact on the diversity it is meant to protect is increasingly questioned. Accumulating evidence shows that wildlife might be better maintained through people’s intervention, rather than exclusion. For example, LANDSAT images of the Tsavo National Park in East Africa, set up to protect elephant populations, shows a vivid reversal of expectations: the park land is deteriorating rapidly while the forest of the inhabited buffer zone around it is flourishing.

In its aggressively intentioned conservation agenda, the Convention singles out these in-situ methods as the prime tool to conserve global biodiversity. Indeed, the Convention’s designers and proponents largely draw from international nature conservation agencies. Protected areas are to be set up by all contracting parties, and is expected that the numbers of hectares will continue to soar. According to the Convention, these zones should be complemented by special “development” areas nearby (Article 8.e). The aim here, though, is to reinforce protection of protected areas by throwing out local communities, rather than integrating them in the conservation effort and foster their economic or social welfare. Thus, conservation will continue to be seen as something separate from development and, unless radical reforms sweep over the “professional” ideology, people will continue to be cut off from their stewardship role in biodiversity management.

Ex-situ: freezing seeds and sperm

The other mainstream approach to biodiversity conservation is ex-situ or “off site” protection. This normally takes the form of genebanks and botanical gardens. Genebanks are temperature controlled storage units — essentially giant ice boxes — which are meant to preserve biodiversity in the form of seeds, sperm, ovules, tissue culture, pollen and even DNA. Worldwide, 131 countries currently house national ex-situ collections of plant genetic resources for food and agriculture in one form or another. Added to this, ten International Agricultural Research Centres (IARCs) of the Consultative Group on International Agricultural Research (CGIAR) maintain important collections of the world’s major food crops. Altogether, some 4.35 million plant samples are being stored under ex-situ conditions today. Despite the fact that the vast majority of those sam-

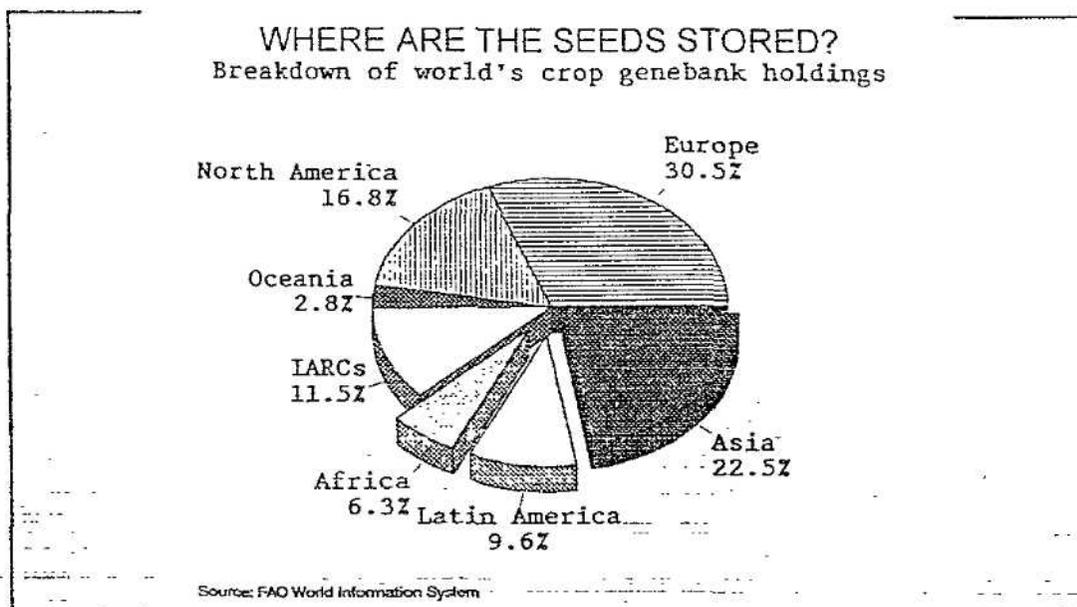
ples were collected in the Third World, the bulk of them are now housed in or controlled by the industrialised countries (see graph). An unknown proportion — some say half — of these are duplicates of each other. It has been estimated that the international collections of the CG centres represent 35% of all original materials, making these specific collections very important for food security.

The benefits of ex-situ conservation are pretty straightforward. The diversity currently held in genebanks is, for all practical purposes, the most immediately accessible form of breeding materi-

The Convention's approach to ex-situ conservation is to treat it as a complement, a second-class approach, to in-situ conservation. Essentially, it calls for governments to establish and maintain facilities and regulate collection of samples in function of population sizes.

Access and control

Beyond calling for more seedbanks and nature parks, the Convention lays out general rules on access to genetic resources. These rules stipulate that countries have sovereign rights over the re-



als used by the breeding and biotech industries. On the negative side, ex-situ conservation has been criticised from many angles. As a philosophy, ex-situ conservation has the drawback of cutting plants and animals off from evolution. Specimens that are frozen in time will only adapt to their new institutional settings, not to a changing environment. Thus, valuable characteristics will be lost or foregone in time. As a centralised and technology-dependent form of storage, genebanks suffer power shortages, lack of trained personnel and inadequate funding. Finally, from the geopolitical angle, today's ex-situ collections of crop, microbial and animal genetic resources are by and large controlled by the North whilst the bulk of the material was taken from the South.

sources that occur in their territory. Access shall be granted on mutually agreed terms and subject to prior informed consent. However, this only applies to states which are "countries of origin" of the genetic resource in question or to states which acquired the resource under the provisions of the Convention.

This last point raises an important problem. All the currently held ex-situ collections of biodiversity are subject not to the rules of the Convention but to the laws of the jungle. This neatly accommodates the commercial interests of the industrialised countries. Today, the North effectively controls 61% of all crop germplasm collections (national holdings plus those of the CGIAR, see graph), 85% of all fetal populations of domesticated livestock and 86% of global microbial culture collec-

tions — the bulk of these materials originating from the South. The Convention has been construed in order not to disturb this imbalance, much to the advantage of the breeding and biotech community in the North. All of these collections can effectively be treated as the property of the governments or companies which hold them and they can also freely be patented

Further, what happens to the "international" collections held by IARCs of the CGIAR system remains in doubt. The IARCs are only "international" in an informal sense and the legal status of their genebanks is unclear. In a number of cases, they can be considered the property of the government whose land they are on in case of dissolution of a Centre. To overcome this problem, the IARCs have asked the UN Food and Agricultural Organisation to grant them "trusteeship" over their collections, to be held formally on behalf of the international community. Even so, these collections remain disconnected from any mechanism to share the benefits from the countries of origins of the material.

On-farm: people as actors

In-situ and ex-situ conservation are the only approaches to be supported through the Convention. The Convention does include in its definition of in-situ conservation domesticated and cultivated species (Article 2). In its operational articles, however, it does not further elaborate on this. As argued above, both the classic protected area approach and the genebank system face serious shortcomings in saving what is left of the diversity of both domesticated and wild species. In both systems, local people, the original stewards of the world's biodiversity, are completely left out of the action. Clearly, there is an urgent need to elaborate a third conservation strategy within the framework of the Convention. For want of a better word, we call it on-farm management of genetic resources.

Rural people have been using and conserving biodiversity — domesticated and wild — since time immemorial. It is only in the past few centuries that they are increasingly being marginalised from access to these resources and any role in managing them. Yet wild species and domesticated crop genetic diversity are fundamental to people's livelihood systems. It is often because they are being aggressively deprived of such an important resource base — through the market and policy forces which militate in favour of monoculture and high-yielding varieties, or the warding off of nature parks — that people are taking action today to regain control over biodiversity in their food, farming and income-generating systems.

In the past few decades, organised action to reinstate, promote and improve people-based conservation systems of agricultural biodiversity has been building up. The dynamic of on-farm conservation is eminently centred on use: diversity is maintained not because people set up local museums, but because they use, nurture, live off/with and manage biological resources. In crop and livestock husbandry, on-farm management often consists of recuperating diversity and reintegrating it into production systems, which includes on-farm breeding. This process is intimately tied to local knowledge systems about plants, animals, their interactions and uses, and fosters the conservation and development of indigenous knowledge. When organised as such — often with the backing of peoples' organisations and non-governmental organisations — on-farm management initiatives generally need support from scientists and policy experts to ensure optimum, long term benefits.

However, on-farm conservation and use of biodiversity is not just the remit of externally funded development projects. Farmers — organised or not — are doing it all the time. The point is that the Convention on Biological Diversity should recognise, resource and support people's work in managing genetic diversity, rather than the just the conservation techniques which rob people of this role.

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