

Seedling

Biodiversity, Rights and Livelihood



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Girona 25, pral., Barcelona E-08010, Spain
Tel: +34 933 011 381
Fax: +34 933 011 627
Email: seedling@grain.org
Web: www.grain.org

GRAIN is an international non-profit organisation which promotes the sustainable management and use of agricultural biodiversity based on people's control over genetic resources and local knowledge. To find out more about GRAIN, visit our website at www.grain.org.

Seedling

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Food sovereignty is a solid alternative to the current mainstream thinking on food production. The struggle for food sovereignty incorporates such wide ranging issues as land reform, territorial control, local markets, biodiversity, autonomy, cooperation, debt, health, and many other issues that are of central importance to be able to produce food locally. Food sovereignty also brings together peasants and farmers from the North and South and allows different movements to come together in their struggles.

Food Sovereignty: turning the global food system upside down

GRAIN

When last February France's president, Jacques Chirac, toured a number of countries in Francophone Africa, he talked a lot about agriculture. Stopping over in Dakar, Senegal, and talking at a seminar where he had the attentive ear of six other heads of state from the region and hundreds of farmers representatives, he called for a reorientation of agricultural development along the lines of food sovereignty. For him, that implies that agriculture should receive a special treatment in the debate on globalisation, local traditions should be respected, and that the development level of each country should be taken into account. However, at the same seminar, he fervently argued that the EU's current farm policies – widely criticised for dumping exports, taxing imports and undermining small-holder agriculture in the EU and elsewhere – should not be seen as the enemy of poor countries and farmers. Apply food sovereignty, but leave the

global food system untouched?

A few months before Chirac went to Africa, GRAIN held its annual staff meeting in a small village close to Tangail in Bangladesh. Our host was UBINIG, a grassroots NGO that has as its main objective to promote 'Nayakrishi Andolon', which literally means 'new agricultural movement'. Nayakrishi farming avoids the use of external inputs, uses a tremendously diverse base of local seeds, and most of all considers the growing of food as an integral part of their culture, their self reliance, and the sovereignty of local communities. It also produces more food than any of the industrial agriculture methods that are being pushed upon the country.

The villagers that hosted our meeting insisted on showing us their 'Community Seed Wealth Centre'. The centre is stunning. A bewildering amount of clay pots and glass bottles contain the



"Food Sovereignty is the right of peoples, communities, and countries to define their own agricultural, pastoral, labour, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies."

From: *Food Sovereignty: A Right For All*, Political Statement of the NGO/CSO Forum for Food Sovereignty. Rome, June 2002

seeds of hundreds of different varieties of dozens of different crops. But the women in charge of the seed centre patiently explained that this is just the tip of the iceberg of the seed network that they are part of. Hundreds of communities in many different parts of the country use the seeds every season, keep them safe in their homesteads, and a sophisticated exchange and monitoring network of the villagers ensures that at any point in time thousands of different seed varieties are being grown and kept alive, somewhere. At some point in the discussions, someone asked the question what they understand by food sovereignty. One of the women pointed to the seed centre behind her, smiled, and simply said: 'this'.

At the heart of food sovereignty is local autonomy. The UBINIG women feel strongly that the loss of seed from the household also means the loss of the women's power. Dependence on the outside market for seeds makes them redundant and powerless, and displaces them from the control of the heart of the agricultural system. What is true for the survival of women as farmers, is also true for the survival of peasant agriculture as a whole. The neo-liberal globalisation agenda pushes for an agriculture in which the billions of today's peasant farmers have no place, and in which the global corporations - with the active support of government elites North and South - control the food chain all the way from agricultural inputs and the growing of the crops, to the distribution, processing and selling of food across the world. This is the very vision of agriculture that the concept of food sovereignty challenges.

Food sovereignty in context

The concept of Food Sovereignty was first launched by Via Campesina at the 1996 World Food Summit in Rome. Since then, it has been discussed and developed further at many subsequent gatherings.

In 2001, the 'World Forum on Food Sovereignty' was held in Cuba and a year later, at the NGO/CSO Forum on Food Sovereignty held alongside the second World Food Summit in Rome, the concept was further discussed and elaborated.

Many different actors (from social movement to governments) have appropriated the concept and it is now widely used. In a way, food sovereignty's 'success' as a new discourse, has also been part of its problem as different people now use it for very different purposes resulting in a situation where it is fast being emptied of its original contents and meaning. Chirac's understanding of the concept quoted at the beginning of this article is just one example of this.

Food sovereignty has its roots in life and struggle of peasant farmers, fishermen and indigenous peoples. Different from many other terms invented by intellectuals, policy makers and bureaucrats, food sovereignty springs from the peasant struggles as a need to create a strong, radical and inclusive discourse about local realities and needs that can be heard and understood globally.

In a way, the concept was developed as a reaction to the increasing (mis)use of 'food security'. The mainstream definition of food security, endorsed at Food Summits and other high level conferences, talks about everybody having enough good food to eat each day. But it doesn't talk about where the food comes from, who produces it, how under which conditions it has been grown. This allows the food exporters, North and South, to argue that the best way for poor countries to achieve food security is to import cheap food from them, rather than trying to produce it themselves. This, as already is becoming painfully evident everywhere, make those countries more dependent on the international market, forces peasant farmers that can't compete with the subsidised imports off their lands, and leaves them looking in the cities for jobs



that don't exist. Food security, understood this way, just contributes to more poverty, marginalisation and hunger.

The thinking behind food sovereignty contrasts this neo-liberal approach that believes that international trade will solve the world's food problem, with a focus on local autonomy, local markets and community action. Perhaps, then, the first issue to stress is that food sovereignty is a process of peoples' resistance and its conceptualisation can not be carried out outside the dynamics of the social movements that are central in these struggles.

The local space first

The first space in which peasants identified the transformative power of food sovereignty was, of course, the local space. This is where the farmers have their roots, and where the seeds that they sow grow their roots. It is here where food sovereignty acquires its most central dimension. It is also at this level that strategies and actions are formulated and developed; from the fight against pesticides by the women in Paraguay, to the seed networks in France, Spain and Italy and from the peasant cooperatives' initiatives in Uganda, to the rescuing of traditional medicine by the indigenous peoples of Chiapas. It is in the spaces where local communities are creating autonomy based on their own needs, beliefs and timelines that food sovereignty acquires real meaning. It also acquires a common understanding that allows peasant communities from different parts of the world to appreciate - and identify themselves with - each others struggles.

Therefore, when farmers of MOCASE put themselves in between the bulldozers and their fields to stop large landowners from taking their land in order to plant soybean monocultures, they know that they are not only defending their livelihoods, but also that they are resisting a development model in which peasant farmers have no place what so ever.

MOCASE stands for 'Movimiento Campesino de Santiago del Estero' and is a farmers movement from the province of Santiago del Estero in Argentina. It was formed in 1990 to defend local farmers against the increasing aggression from large soybean farmers destroying their livelihoods. Asked about food sovereignty, they say:

"For MOCASE, food sovereignty is the right to produce and eat what we want. Our strategy is to strengthen

our own production and consumption models based on self sufficiency, production of our own food that we produce in our gardens, and the cultivation of cotton and maize. We protect our own culture passed on from our ancestors, the animals, the chickens, the different types of goats, and the geese. Santiago del Estero is a region with low requirements, and the mountains are our only source for food."

Traditional agricultural systems have developed based on principles of cooperation, integration and dialogue with nature. This in turn has led to highly complex agro-ecological systems. Such farmers are custodians of thousands of years of research and creation that has made such an extraordinary biodiversity-based agriculture possible. This agricultural biodiversity and culture is today vigorously defended by peasant organisations in the name of a unique heritage and food production for billions of people on the earth today and in the future.

This is in stark contrast with modern industrial agriculture. Such systems are based on greed, exclusion, and destruction, and can be seen by vast monocultures dependent on a few species and varieties and impervious to local cultures and people.

The broader dimensions

Food sovereignty is a solid alternative to the current mainstream thinking on food production. The struggle for food sovereignty incorporates such wide ranging issues as land reform, territorial control, local markets, biodiversity, autonomy, cooperation, debt, health, and many other issues that are of central importance to be able to produce food locally.

Land reform in particular is an important component of food sovereignty; a radical redistribution of land, particularly amongst the poorest and those without access to land. The Brazilian 'Movimiento de los Sin Tierra' (Brazilian Landless Movement) is a good example of how food sovereignty is intrinsically linked with the social struggle of the millions of rural people that have been thrown off their lands and urban poor that have never had access to land and who now search for the path to recuperate their identity by claiming back land. One of the major bottlenecks of local food production is the unequal distribution of land. In many countries of the world 20% of the landowners control 80% of the land - and such land is often used to produce export commodities rather than locally available food. Similarly, the



enforcement of the rights of indigenous peoples to their territories is an indispensable requisite to move towards food sovereignty.

Food sovereignty also brings together peasants and farmers from the North and South, an artificial distinction promoted by many. For example, the farmers' seed networks in France are as much about food sovereignty as the struggle of the women led seed wealth centres in Bangladesh. Or in the words of Jose Bové, a peasant farmer leader from France: *"For the people in the South, food sovereignty means the right to protect themselves against imports. For us, it means fighting against export aid and against intensive farming. There is no contradiction there at all"*.

Perhaps even more importantly, food sovereignty allows different movements that traditionally too often have been played out against each other, to come together in their struggles. The peasants, the landless, the fisherfolk, the pastoralist, indigenous peoples.... are increasingly coming together and are developing a common understanding of

common aims and actions.

Food sovereignty has also come to the millions of city dwellers that are fighting for survival in the big cities. Production of food in family or community gardens not only brings wholesome food, that industrial agriculture is often unable to deliver, but also a level of dignity, cooperation and independence.

All of these people are fighting for something more than Jacques Chirac's interpretation of food sovereignty in Senegal. Unlike for Chirac, food sovereignty implies that the global food system should be turned upside down. It has been peasants, fisherfolk, pastoralists and indigenous peoples that have fed the world since millennia - to achieve a world without hunger a world where all have access to nutritious locally produced food, they need to take centre stage again.

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Going Further

- Michael Windfuhr and Jennie Jonsén, 2005, *Food Sovereignty: Towards democracy in localized food systems*, FIAN-International. Available from: ITDG Publishing, Bourton Hall, Bourton-on-Dunsmore, Rugby, Warwickshire, CV23 9QZ, UK, Tel +44 1926 634501, Fax +44 1926 634502, Email: orders@itpubs.org.uk, Website: <http://www.itpubs.org.uk>

"In this paper, Michael Windfuhr shows how the Food Sovereignty policy framework starts by placing the perspective and needs of the majority at the heart of the global food policy agenda. It also embraces not only the control of production and markets, but also the Right to Food, people's access to and control over land, water and genetic resources, and the use of environmentally sustainable approaches to production. What emerges is a persuasive and highly political argument for refocusing the control of food production and consumption within democratic processes rooted in localised food systems." - From the preface by Patrick Mulvaney (ITDG)

- Via Campesina, position paper, 'What is food sovereignty?' http://www.viacampesina.org/art_english.php3?id_article=216
- Peter Rosset 'Food Sovereignty: global rallying cry of farmer movements'. Food First Backgrounder, Food First, Fall 2003. <http://www.foodfirst.org/pubs/backgrdrs/2003/f03v9n4.html>
- "Food Sovereignty: A Right For All Political Statement of the NGO/CSO Forum for Food Sovereignty". Rome, June 2002. <http://www.foodsovereignty.org>

In 2004, the members of the Convention on Biological Diversity started negotiating an “*international regime on access to genetic resources and benefit-sharing*”. Many developing country governments are enthusiastic about this process. They speak about it as something which will put an end to biopiracy and finally realise the “*fair and equitable sharing of benefits*” derived from biodiversity, long promised by the CBD. In reality, the regime will have very little to do with benefit-sharing at all, much less with fair and equitable sharing. The focus will remain where it has always been in the CBD’s discussions: on access to genes for research and commercialisation, and on setting a price for such access. The only new element likely to materialise in the regime is some form of international enforcement for national access legislations, possibly a system of certificates to prove that a genetic resource has been lawfully acquired.

Re-situating the benefits from biodiversity

a perspective on the CBD regime on access and benefit-sharing



GRAIN

The three objectives of the 1992 Convention on Biological Diversity (CBD) are incredibly ambitious. Number one and two alone are daunting - the conservation of biological diversity and the sustainable use of its components - without reserve or restriction. But the boldest and most remarkable is nevertheless number three - the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

If realised, a fair and equitable benefit-sharing from the world’s biodiversity would fundamentally change the way genetic resources are controlled

and exploited. Today, benefits are increasingly dissociated from the hard work of conservation and sustainable use. Rural communities and indigenous peoples who actually manage most of the world’s biodiverse forests, fields and waters are rapidly being marginalised by economic and political forces. Not only are their resources exploited by others without proper recognition or support. Worse, their traditional systems of use and sharing are constrained and undermined, and biodiversity itself is eroding as a result.

Fair and equitable sharing would imply, for a start, the restoration of full usage rights to the biological resources necessary for traditional community

livelihoods, as well as the corresponding land and water rights needed for their proper management. It would mean an end to all monopolisation or privatisation of genetic materials through intellectual property rights (IPRs) or other means, including through government claims of national ownership rights over biological resources. It would require all results of biological research to be freely shared among those who could have use for them. It would, in short, require genetic resources to be managed as a heritage to nurture rather than as a market commodity to sell.

CBD's underlying trade-off

This, of course, is not about to happen at the CBD, because it was never intended to. Like in so many international treaties, the rhetoric of the CBD is one thing, and its real political content another. While many of the idealistic biologists who helped draft the text nearly 20 years ago were no doubt sincere about the aims of conservation and sustainable use - some possibly even about benefit-

sharing - the hard-nosed politicians who moved in to finalise the deal had a different agenda. The emerging biotech industry in the North, eagerly promoted by its governments, wanted to secure its access to genes. Biodiversity-rich governments in the South had realised that this gave them both political leverage and a unique business opportunity.

So the text was drafted to allow governments (of the South) to control the flow of genetic material across their borders, and to claim a share of the profits whenever something was commercialised by private corporations (of the North). In return, the corporations would be allowed to freely use patents and other IPRs to exclude others from using the genes they had lawfully paid for. This business deal - not the conservationist concerns - was the real origin of the political consensus that brought the CBD into being.

The key to the consensus was the strong assertion of national sovereignty over genetic resources.

Box: Ending biopiracy?

Will the international ABS regime end biopiracy? That depends very much on what one puts in the word. Biopiracy is not a very well defined term, and it is now used in so many different senses that we at GRAIN increasingly try to avoid it!

There is an inherent problem with the concept of biopiracy, long recognised by many but never taken seriously enough. The core meaning of piracy is to take something that belongs to someone else without permission or payment. Implicitly, this means that if some kind of payment is made, there is no longer a problem. In our view, however, most of the problem is in the "belonging" part of the picture. Permits or payments end up getting arranged. But who said biodiversity belongs to anyone to begin with? There's an assumption of ownership that causes any discussion of biopiracy as a problem to end up with the wrong solution. Under the guise of correcting some kind of misappropriation, we actually just facilitate appropriation. (This is how we get community IPRs as a solution to Monsanto's IPRs.)

When Megadiverse country governments say that the international regime can end biopiracy, they're taking a purely legalistic view. If access takes place in accordance with national legislation, it is by definition not biopiracy. For them, a certification system which makes it difficult or impossible to access and/or patent genetic materials without government permission would indeed greatly reduce biopiracy, if not eliminate it.

For the real holders and managers of biodiversity, most of whom are rural communities and indigenous peoples, this is not necessarily very helpful. Biopiracy by government institutions and other so-called public institutions is often more commonplace than biopiracy by foreign corporations. Many countries' laws, and government officials, interpret national sovereignty over genetic resources as more or less equivalent to state ownership, translating into little or no say for communities over the pumping of resources from their land or water. And even where there is some formal requirement to consult or even get consent, in practice there is seldom a real opportunity to say no.

In several countries, we are increasingly seeing political conflicts over how national biodiversity legislation is used to transfer control over biodiversity from communities to government institutions, or extract information about traditional management into databases without any protection of community rights. For example, in India, the country currently hosting the Megadiverse secretariat, hundreds of communities have refused to set up the local Biodiversity Management Committees required by the new Biodiversity Act and demand changes to the legislation, because they regard it as a means to facilitate privatisation rather than protect biodiversity. In Brazil, changes to the Genetic Heritage legislation are under way which threaten to remove existing protection of traditional knowledge in databases, do away with the requirement to present proof of community consent before getting a bioprospecting permit, and make the Ministry of Science and Technology the only beneficiary of benefit sharing under bioprospecting agreements. And this is all in the name of controlling biopiracy. For many people, the governments are turning into the biggest biopirates of all.



For obvious reasons, this was very appealing to developing countries. The CBD put an end to the pretence that all governments managed genetic resources without self-interest as a “*common heritage of humanity*”. In reality, colonial governments had been systematically extracting genetic resources from the South for their own benefit during several hundred years, first through state-owned companies and supposedly non-commercial entities such as botanical gardens and medical research institutes, later also through crop genebanks and microbial collections. After the colonial period, “common heritage” had become the smokescreen under which this extraction could continue, now increasingly under the control of private corporations and protected by IPRs. National sovereignty over biodiversity seemed to offer developing countries the legal possibility to finally put an end to this colonial relationship.

What many of them did not realise then, and some maybe not today, was that the choice to go for access control and genetic resource commodification played directly into the hands of developed countries and transnational industry. National access legislation could certainly put a brake on the uncontrolled extraction of genetic resources. Any country is free under CBD to close its borders and stop gene exports. But then the business opportunity created by the Convention will also vanish. The only way to make biodiversity generate the expected economic benefits is to enter into commercial agreements with the very corporations, botanic gardens and research institutes which the legislation was supposed to control. And none of them will ever sign a contract unless it guarantees the right to seek patents over anything that results from the research. In other words, access legislation did not provide the means to beat the biopirates. On the contrary, it created the need to enter into partnership with them. It became not a defence against the brave new world of IPRs, but the entry ticket to it.

Given this history, it is not surprising that there has been lots of discussion about access at the CBD, but very little about benefit-sharing. Language use is revealing. Since many years, benefit-sharing is never mentioned in CBD documents except as part of the fixed expression ‘access and benefit-sharing’ (or ABS for short) – an expression which incidentally does not appear in the actual CBD text at all. In contrast, the ‘fair and equitable’ part has disappeared from the horizon altogether, despite its prominent position in the treaty objectives. The message? That there exists no benefit-sharing obligation apart from the obligation to pay for

accessed genes – and in particular no obligation for benefit-sharing to be fair or equitable.

In practice, ABS discussions at the CBD have focused not only on access as opposed to benefit-sharing, but almost exclusively on one very particular form of access: bioprospecting. The most ambitious ABS document produced by the CBD so far, the Bonn Guidelines, is essentially a manual for the negotiation and implementation of bioprospecting contracts. Why this narrow focus? Because most of the more usual forms of access to genetic resources fall outside the scope of the CBD, notably all pre-CBD collections, and so are already accessible to industry without any ABS hurdles. This means that bioprospecting is where the interests of biotech industry and developing country governments coincide. For both, it is those genetic materials which cannot be found in collections which hold the largest potential value, exactly because there is no alternative source.

There is little reason to expect the upcoming international regime to expand much from the access/bioprospecting myopia. The discussions so far have been mainly repetition of well-known positions. The tolerance for broader approaches is very limited. For example, at the ABS Working Group meeting in Bangkok in February 2005, a UNEP representative ventured to raise some wider issues about the overall effects on benefit-sharing of ever more proliferating IPR protection. For this he was viciously attacked by several representatives of the EU, the US and other developed countries, and UNEP later dissociated itself from his statement.

The certificates concept

There is really only one new element to the regime discussion, and that is the proposal by the Megadiverse Group to create an international system of certificates, to accompany genetic resources which have been accessed in accordance with CBD principles and applicable national legislation. This was the key component of the international regime idea already when it was first launched by the Megadiverse in their Cancún Declaration in 2002 (see *Box: The Megadiverse Group*). The term they use is “certificates of legal provenance”. In essence, it would amount to an international enforcement system for national access legislations, somewhat comparable to what the World Trade Organisation and its TRIPS Agreement already provide for national patent laws. It would create a legal obligation for all CBD member states to monitor compliance with whatever conditions provider countries have set



Box: The Megadiverse Group

- The Like-minded Group of Megadiverse Countries was formed in 2002 at a meeting in Cancún, Mexico. The original members were a dozen of the most biodiversity-rich developing countries.
- Membership has since increased to 17, and the group presently includes Bolivia, Brazil, China, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, India, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Peru, Philippines, South Africa, and Venezuela.
- The group is essentially a biodiversity cartel, aiming to strengthen the bargaining position of biodiversity-rich countries much in the same way as OPEC does for petroleum exporters.
- The first objective in the founding document, the Cancún Declaration, reads: "Coordinate our efforts in order to present a common front at international fora dealing with biodiversity."
- Another key objective is to develop "scientific, technical and biotechnological cooperation (...) to add value to the goods and services generated through biodiversity and ecosystems, while ensuring the development of biotechnology".
- The group meets annually both on ministerial and expert level. The most recent meeting was in India in January 2005.
- The Megadiverse Group receives financial and practical support from UNEP, IUCN and GEF.

down, and provide sanctions for non-compliance under their own legal systems. The net effect being to put Megadiverse countries and other genetic resource sellers on a more equal footing with the buyers and their IPR systems, leading in the end to a 'better price' for the genetic goods.

The concept is that each 'genetic resource' leaving a CBD member state would have to carry a certificate issued by a legally competent body in the providing country, which proves that the movement of the item has fulfilled basic CBD requirements as well as any additional conditions imposed by national legislation. The main use of this certificate would be in IPR applications. Only with a valid certificate would it be possible to submit a patent application, for example, for a product developed on the basis of a genetic resource.

In other words, the certificate would be a mechanism for achieving the long-standing demand of developing countries for a 'disclosure of origin' requirement in patent applications for genetic resources. But it differs from other proposals in that the certificate would be an independent document issued under a 'self-standing' system, likely comprised of national government agencies and coordinated by the CBD. This means that patent offices would not be involved in the actual assessment of whether the certificate conditions were fulfilled. Their only role would be to check whether there was a valid certificate or not, just like they already check whether other formal requirements are fulfilled before admitting a patent application for

examination. Independently issued, the certificate could also be used in other contexts. For example, there may be a requirement to present valid certificates when applying for research funding, or when submitting a finished product for marketing registration with relevant authorities.

The CBD-WTO-WIPO nexus

Because this proposal links in so intimately with earlier discussions at the World Trade Organisation (WTO) and the World Intellectual Property Organisation (WIPO) about disclosure of origin, it will automatically mean that the CBD process will have strong interconnections with developments there, which could work both ways. Notably, a number of developing countries have made renewed submissions to the WTO TRIPS Council on various aspects of a disclosure requirement over the past year. If the issue ends up on the agenda of the WTO Hong Kong Ministerial in December 2005, as some seem to believe, it might have a direct knock-on effect on the CBD process.

The linkage with WIPO is more likely to work the other way around. Once there is political agreement to develop a certificate system or some different version of a disclosure of origin system, WIPO is likely to be the venue for much of the technical negotiation.

The direct connection to current trade and intellectual property negotiations is one reason why the certificate proposal might get accepted, despite the long history of stalemate on disclosure. Both the Doha Round of multilateral trade talks



and WIPO itself are in desperate need of a positive makeover, and this might be a compromise which offers a considerable amount of image improvement at very limited cost. As the certificate system would not really involve any constraints on patenting, except for blocking items which were clearly stolen, developed countries would not really give up much of their position. Already some developed country governments, in particular the Europeans but also countries like Canada and New Zealand, have begun to soften their previously rigid stance on disclosure of origin. Both the Swiss and the EU have submitted proposals at WIPO and the WTO which open the door a little, and they have also shown some polite interest in the certificate concept. If in exchange for accepting a certificate system they could demand more unambiguous support from developing countries for routine use of IPRs on genetic resources and traditional knowledge, the deal could actually be a very attractive one for them.

What will change?

Let's assume that after a fairly long and difficult negotiation – several delegates at the February Bangkok meeting were hinting at a ten-year marathon – developing and developed country governments do manage to agree on some version of a certificate system. This becomes the centrepiece of an international regime which otherwise mostly recycles existing language from the Bonn Guidelines and elsewhere. What does it mean in practice? How does it change present patterns of access to genetic resources?

The key difference it would make is that the government in a provider country, having issued a certificate, would have a comparatively easy way of tracking what happened to that certified resource. Patent databases could be used to identify applications involving that resource, and those applications could be checked to see whether the conditions of the certificate were fulfilled, for example royalty payments back to the provider. In the same way, intellectual property applications involving genetic resources not covered by a valid certificate could be easily tracked down. The system could even be set up to require patent offices in all member states to routinely report all relevant applications to a common database, and/or directly to the country or countries cited as providers in the applications. Similar checks could be performed in connection with, for example, public funding of research or pre-marketing product registration.

Whatever the details of the design, it is safe to assume that the certificate system would put national governments in provider countries in a stronger position when it comes to setting conditions for access through national legislation and/or negotiation of bioprospecting contracts. The tracking system of course does not provide any legal enforcement as such. There would still be a need for legal action of some sort to invoke sanctions against offenders. But in practice, the existence of the system could already serve as a deterrent.

The question is how governments would use this more powerful position. The problem with all CBD provisions about access is that, in strictly legal terms, they only regulate the relation between parties to the Convention – that is between governments. It is between governments that there exists an obligation to secure prior informed consent and to negotiate mutually agreed terms for access. But governments are seldom the direct or real holders of genetic resources, especially when it comes to in situ materials which are the ones primarily covered by the CBD and the typical objects of bioprospecting deals. The holders may be individual citizens, private organisations or companies, but very often they are rural communities or indigenous peoples who manage them as an integral part of their traditional livelihood and knowledge systems.

There is nothing to stop governments from using the authority vested in them under the CBD to strengthen the role and position of small farmers and local communities, the real biodiversity holders and managers. National sovereignty over biological resources does not mean, in itself, national ownership or total control. It means that governments have the right to set the rules of the game within their jurisdiction. There is absolutely nothing to prevent them from assigning the right to give prior informed consent and negotiate mutually agreed terms to the real holders of genetic resources – including the right to refuse consent and block access. In fact, there are strong reasons to assert that this is the only fair, or even reasonable, interpretation of the CBD. Nobody is arguing that other CBD obligations only apply to governments. It is taken for granted that conservation and sustainable use are joint responsibilities involving everyone. So why would access provisions alone have such a different scope?

In reality, the track record of many governments – including a number of the leading Megadiverse countries – is not good. Very commonly, access



The international regime process

- The idea of the international regime was first formulated, at the intergovernmental level, by the Megadiverse Group. It was one of the demands in their founding statement from 2002, the Cancún Declaration.
- At the Johannesburg Summit on Sustainable Development later in the same year, governments requested the CBD to start negotiating such an agreement.
- A mandate for the negotiation was drafted at CBD meetings in 2003 (ABS Working Group 2) and 2004 (COP7).
- The mandate identifies articles 15 (access) and 8j (traditional knowledge), plus the three CBD objectives as the main focus for the regime. It also requires that the negotiation be undertaken in cooperation with the CBD 8j Working Group.
- A first negotiating meeting in Bangkok in February 2005 (ABS WG3) was spent mainly on further clarification of the mandate. There was little agreement even on basics such as whether a regime is needed at all, whether it should be binding, whether it would be a new legal instrument or a collection of existing ones, or whether it maybe exists already.
- Next negotiating meeting will be in Spain in January 2006 (ABS WG4), and take place back to back with the 8j Working Group.
- The ABS Working Group will then report back to COP8 in Brazil in March 2006, where a new mandate will also be discussed.
- At the WTO TRIPS Council, several papers on disclosure of origin, certificates, PIC and benefit-sharing have been submitted during 2004-2005. Some expect ABS and/or disclosure of origin to become an issue during the WTO Hong Kong Ministerial in December 2005. Any decision there could directly influence the CBD negotiation.
- At WIPO, disclosure of origin has also been discussed in several technical bodies including the Standing Committee on Patents, the Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore, and the meetings dealing with the reform of the Patent Cooperation Treaty. If there is political agreement on a disclosure requirement or a certificate system at CBD or WTO, this will directly influence WIPO, where more detailed technical negotiations will need to take place.

laws concentrate power within government institutions with little or no say for communities or other biodiversity holders. So there is every reason to fear that a strengthened legal position for provider governments under the new regime would not translate into a strengthened position for the biodiversity holders in those countries, but possibly the direct opposite. The worst-case scenario is that the prospect of a stronger bargaining position in gene deals would encourage governments to monopolise access control more completely, and leave communities and indigenous peoples in an even weaker position than before.

The discussions at CBD have done nothing to alleviate those fears. Yes, there is some recognition of community rights in relation to traditional knowledge, but when it comes to rights associated with genetic resources themselves, most governments carefully avoid leaving any space for community control. The notable exception at the February meeting of the ABS Working Group in Bangkok was the African Group, which consistently made a point of acknowledging the importance of strengthening community control over genetic resources as well as traditional knowledge. The Africans also very clearly articulated their vision of using biodiversity as a means for broad-based

development of their societies, trying to encourage cooperation rather than competition between communities and governments.

For indigenous peoples, who have been the only really vocal group of observers so far in the CBD's ABS regime process, there is an additional and even more serious aspect to the whole discussion. Indigenous peoples are nations themselves and therefore have a claim to their own sovereignty over genetic resources under the same international law as states do. The International Indigenous Forum on Biodiversity has been very clearly saying that indigenous peoples do not ask for delegated rights from states, but claim their own sovereign rights, just as they do with territorial rights and other natural resources. This is obviously perceived as very threatening by many governments, and has led to increasingly chilly relations over the last few meetings. Most indigenous representatives have strongly pessimistic expectations on the regime negotiation and foresee an outcome that reinforces violations of indigenous rights rather than the opposite.

In terms of access, then, the international regime could change the rules of the game to some extent – most probably for the worse, as far as



local communities and indigenous peoples are concerned. But in terms of benefit-sharing, which was supposed to be the main objective, the regime will be almost completely irrelevant. This is not because it will not change the access rules radically enough. It is because access regulation in fact has very little relation to benefit-sharing.

Benefits for whom?

The tragedy of the whole ABS discussion is that it is largely based on an illusion. It starts from a complete misconception about what the benefits of biodiversity really are. Very little of the real benefits come from privatising and commercialising a few selected genes. The vast majority of the benefits from genetic resources are realised through the day-to-day use of biodiversity by billions of people on their farms and in their villages. The potential profits from scoring bioprospecting deals are insignificant compared to the immense value that unprivatised and uncommercialised biodiversity contributes on a daily basis to peoples' livelihoods, to the health of our environments and to local economic development.

It is understandable if developing country governments got carried away ten years ago by the dream about a treasure of green gold at the end of the rainforest. They were, after all, led into that dream by a whole pack of well-paid Northern academics and conservationist NGOs preaching their new-found gospel about how 'the market' would save the environment and the economies of the developing countries in one fell swoop. But today we know that, after more than a decade of CBD implementation, the number and value of bioprospecting deals has been ridiculously small, and in those few that really happened the economic returns for governments and communities alike have been negligible. GRAIN and many others have warned since the inception of the CBD that this would prove to be a dead end road.¹ Today, even the main pushers of bioprospecting and bilateral contracts have sobered up and are publishing ample empirical evidence for the failure of this naïve dream. A recent book documenting bioprospecting agreements in the Pacific Rim region lists a total of only 22 finalised access agreements in those 41 countries over the whole period since 1991.² There is no longer any excuse for governments to pursue this mirage and continue neglecting the real benefits.

For countless communities of farmers, forest keepers, fisherfolk, hunters and others, the crucial benefit-sharing issue is not whether they can control

access. What really matters in terms of benefits is their own autonomy to continue using, managing, sharing and developing biodiversity. In this sense, it would not really make much difference to most people whether their governments succeeded in pocketing a smaller or larger part of the profits from the biotech transnationals. In strictly economic terms, it would not even matter much whether corporations or governments made some economic profit at all from bioresources.

What would make an enormous difference in benefit terms is whether national or local legislation, economic policies, patent and seed regimes, land-holding patterns and the rest of the socio-economic environment allows the space for communities to maintain a viable biodiversity-based economy. More often than not, that space has eroded tremendously over the last few decades. Conflicts over land, water and other resources have left communities with insufficient control to continue to sustain or secure a livelihood. Privatisation of research in combination with patents and other monopoly tools have limited access to genetic materials. Seed legislation has outlawed traditional varieties and forced a blanket transition to uniform commercial seeds. Even biodiversity protection schemes, such as nature reserves, have impeded traditional biodiversity management. If governments were serious about the benefit-sharing objective of the CBD, they would be focusing on these major structural factors and flaws which really determine who benefits or not from genetic resources, not on the negligible contribution of a few biotrade deals.

When groups like GRAIN point to community perspectives in these discussions, we are sometimes criticised for diverting attention away from real solutions. Nothing could be more wrong in this case. Local biodiversity management systems of rural communities and indigenous peoples are absolutely central to any consideration of benefits from biodiversity, in two distinct but complementary ways.

Firstly, biodiversity conservation and use just do not make sense without community involvement and control. Many of the truly biodiverse environments still remaining in the world rely on the active and effective custodianship of local communities. When they are not disempowered by mainstream development programmes and practices, local communities have a lot of capacity to use and generate plenty of benefits from biodiversity. Unless government policies are turned around so that communities can keep

1 - The Gaia Foundation and GRAIN, "Biodiversity not for sale: Dismantling the hype about benefit sharing", *Global Trade and Biodiversity in Conflict*, Issue No. 4, April 2000, London/Barcelona, 19pp. Available at grain.org/briefings/?id=134.

2 - Santiago Carrizosa, Stephen B. Brush, Brian D. Wright, and Patrick E. McGuire (eds), "Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity", *IUCN Environmental Policy and Law Paper No. 54*, World Conservation Union, 2004, 316pp. <http://www.iucn.org/themes/law/pdffdocuments/EPLP54EN.pdf>



their autonomies and freedoms with respect to their environments and cultural practices, the destruction of biodiversity will simply accelerate and the CBD will have utterly failed in its primary objective.

Secondly, it is mainstream neo-liberal development planners who need to learn about benefit-sharing from rural communities, not the other way around. The idea that value can be created from biodiversity by first monopolising genetic resources and then selling them for a profit is not only wrong, it is also destructive. Biological diversity can only be monopolised with great difficulty, using expensive and artificial control systems such as patents, contracts and courts. Where these monopolies are enforced, the long-term effect is not that any new additional net value has been created, but rather that the immense day-to-day value of biodiversity in the hands of local communities has been taken away and destroyed, thereby diminishing the total benefits available to society as a whole.

People have generated, and will continue to generate, a variety of very sophisticated patterns of creating and sharing which work on the principle of balancing rights with responsibilities. We see it every day in the freer sectors of our economies, be it computer programming, herbal medicine, local farming or independent media. In the sphere of biodiversity, genetic resources have traditionally been widely shared, but not disconnected from the culture they come from or the chain of responsibility to take care of them. Keeping those links is what 'protecting' biodiversity is really about.

If the real potential for biodiversity-based development is to be realised, this is the kind of approach to benefit-sharing that needs to be allowed, promoted and implemented. Condemning farmers to handful of 'super seeds' and royalty rackets will defeat rather than promote development in this direction, and with it the very objectives of the CBD.

Further reading

All official CBD documents about the ABS process are available on the CBD website : <http://www.biodiv.org/programmes/socio-eco/benefit/>

The Megadiverse Group has its own website at <http://www.megadiverse.org>, but it has been offline for a while. Their founding document, the Cancún Declaration, can be found at http://www.unido.org/file-storage/download?file_id=11803.

A very informative report of the most recent Megadiverse meeting, in New Delhi in January 2005, by the representative of the UN Development Programme, is available at http://www.undp.org/biodiversity/events/Megadiverse_Meeting.html

All submissions to the WTO TRIPS Council are available through <http://docsonline.wto.org>. Some recent documents dealing with the relation to CBD and the disclosure of origin issue are IP/C/W 429 (Brazil, India and others), IP/C/W 434 (United States), IP/C/W 438 (Brazil and India), and IP/C/W 441 (Peru).

These documents are also available on the GRAIN website: <http://grain.org/go/tripsreview>

The current state of discussions about disclosure of origin at WIPO can be sampled at <http://www.wipo.int/tk/en/genetic/proposals/>. Of special interest are the submissions by Switzerland and the European Union, which both make some attempt to accommodate developing country demands.

The certificate idea is not yet very well developed, but a couple of recent contributions can be found in the proceedings from a 2004 expert meeting organised by the Canadian and Mexican governments. One by Brendan Tobin of the UN University at <http://www.canmexworkshop.com/documents/papers/IV.1.2.pdf>, and another by José Carlos Fernández of the National Institute of Ecology in Mexico at <http://www.canmexworkshop.com/documents/papers/IV.1.1.pdf>. This website also contains a number of other papers related to the CBD ABS discussion. There is also a just published report commissioned by the German Federal Agency for Nature Protection, which gives a good overview of the certificate discussion in particular, but also of the general background and status of the CBD ABS regime negotiation, plus a quite comprehensive bibliography. Available at <http://www.oeko.de/oekodoc/233/2005-001-en.pdf>

For a collection of viewpoints on the regime negotiations, mainly from NGOs and developing country delegates, check out a book published by the Edmonds Institute, *The Catch: Perspectives in Benefit-sharing* (ed Beth Burrows). Not available electronically, but can be ordered inexpensively from <http://www.edmonds-institute.org/publications.html>. One chapter from this book, an indigenous perspective by Debra Harry and Le'a Kanehe of the Indigenous Peoples' Council on Biocolonialism, can be downloaded from the IPCB website at: http://www.ipcb.org/publications/other_art/bsinabs.html



This article summarises the results of five years of research undertaken by Biowatch South Africa on the socio-economic impact of Bt cotton on small-scale farmers in South Africa. It forms part of a comprehensive research paper on the topic that will be published later this year.

Bt cotton

in South Africa

the case of the

Makhathini farmers



Elfrieda Pschorn-Strauss

In 2003, the chairman of the Ubongwa Farmers Union¹ in Makhathini, stood side-by-side with the US trade representative, Robert Zoellick. They announced together that the US would take the European Union (EU) to the World Trade Organisation (WTO) to challenge its stand on genetic modification (GM). The clear message to both the EU and Africa was that the US was standing by the African farmer by giving it access to GM technologies, whereas the EU was not.

The Bt cotton farmers of the Makhathini

floodplains, in northern KwaZulu Natal, South Africa, had become a centrepiece of the GM industry's global promotion of GM crops as a solution to poverty and hunger. Why? A previous study, focussing on the agricultural economics of Bt cotton and published three years previously, had proclaimed huge yield increases for Bt cotton farmers in the Makhathini floodplains.² This study had a profound impact around the world. Bt cotton was heralded as an African success story by the biotech industry. Numerous delegations of African scientists, policy makers, farmer representatives and journalists, were brought to

1 - The Chairman was Mr. TJ Buthelezi

2 - Ismael, Y., Bennet, R. & Morse, S. 2002. Benefits from Bt cotton use by smallholder farmers in South Africa. *AgBioForum*, 5 (1), pp.1-5. <http://www.agbioforum.org/v5n1/v5n1a01-morse.htm> A number of reports were spun off from this initial study of 100 farmers in Makhathini. See also Thirtle, C. Beyers, L. Ismael, Y and Piesse, J. 2003. *Can GM-Technologies Help the Poor? The Impact of Bt Cotton in Makhathini Flats, KwaZulu-Natal*. *World Development* Vol. 31, No. 4, pp. 717-732, 2003

Box: Monitoring Bt Cotton in South Africa

A number of research tools were used in an attempt to monitor the social, economic and environmental impact of the use of Bt cotton over a three year period:

- Semi-structured questionnaires with respectively 20 farmers in 2000 (2000-2001 season) and 40 farmers in 2003 (2002-2003 season), which included 16 of the original 20 farmers. Both dryland and irrigation farmers were interviewed.
- Semi-structured interviews and in-depth discussions with key informants, including government, private companies, farmers' associations and others.
- Direct observation, by establishing a permanent presence in the area from 2002 to 2005 (ongoing), through the appointment of a community worker to participate in fieldwork and interviews.
- Community participation which included attending of meetings of the farmers' associations and two meetings with the community including the feedback of the research results to the community. Their feedback and response were included in the results.
- A review of unpublished and published literature

High adoption rates of Bt cotton in 2000 - 2001, and the continuous switching of farmers between Bt cotton, conventional cotton, and no cotton planting at all made it impossible to maintain a control group of farmers and therefore to compare yields. The study collected data and information on the following issues:

- Income, costs of production and debt
- Adoption rates of Bt cotton
- Pesticide use
- Extension support, marketing and information on Bt cotton.
- The ecological and socio-political history of the area, including the changing involvement of various governments and companies and their impact on the community

3 - Biowatch has met with four of these delegations, including two Zambian delegations, a delegation from Mali and SADC. There have been many more delegations to Makhathini but these four specifically requested to meet with Biowatch.

4 - SOFA report: The State of Food and Agriculture (SOFA) is an annual report by the FAO. In 2003 / 4 the report written by economists focussed on transgenic crops and gave a ringing endorsement of the use of GM crops. Some of their evidence was based on the limited and short-term studies by Ismael, Bennet and Morse (see Footnote 2), and for other countries gathered evidence can only be described as highly selective. For more information visit: grain.org/front/?id=24.

5 - Gouse, M. Kirsten, J. Shankar, B. Thirtle, C. March 2005. Bt Cotton in KwaZulu Natal: technological triumph but institutional failure. www.agbiotechnet.com

South Africa to meet with selected farmers in Makhathini and to showcase the benefits of GM crops for African farmers, all kindly funded by the GM industry and the US government.³

Even the FAO used this study as a basis for its widely criticised SOFA report⁴ in 2004.

Yet, it is now widely recognised that there is massive variability in the growing of Bt cotton; single surveys of farmers provide variable answers, each growing season provides very different results in the growing of Bt cotton. All in all, this initial economic study was a bit premature⁵ and the publicity generated from it, plainly misleading.

It is not only in South Africa that the GM industry has been proclaiming the benefits of Bt cotton. For example, in India, Monsanto led a massive media campaign of showing the wonderful benefits of Bt cotton, which, it turns out, have proved to be extremely misleading (see *Box: Bt Cotton in Andhra Pradesh - a three year assessment* on Page 19).

Therefore, we have a few widely publicised studies

proclaiming the benefits of Bt cotton for small farmers, including higher yields and reduced pesticide use. However, the growing evidence of farmers' experiences points to a darker reality, as shown by this article in South Africa. Bt cotton has not proved to be sustainable in terms of reducing pesticide use nor in terms of improving income for farmers. In many areas insect resistance management plans are not known by farmers and therefore not followed. Secondary pests are becoming a major problem and in some areas, such as in India, Bt cotton simply did not perform. Far from addressing the problems faced by small farmers, reports from the field show that Bt cotton exacerbates their poverty. Alternative methods for reducing pesticide use in cotton are not promoted even though it has proven to be very successful.⁶ Bt cotton is just a distraction that maintains the pesticide industry and lures countries of the South into accepting GM.

For it is clear that Bt cotton is also a Trojan Horse. By having one GM crop in place, it is then possible and far easier to grow other GM crops; the necessary legislation is in place, the relevant



scientists are trained up, the idea of genetically modified crops is more acceptable, etc....⁷ Bt cotton has been chosen as a Trojan Horse in Africa and India, as it is perceived as being less controversial (it is not a food crop) and it has been easy to convince farmers with little money to start growing it.

In the long term, the GM industry, such as Monsanto, are not that interested in Bt cotton (cotton is a very minor crop in South Africa) - they are far more interested in other more lucrative crops. For more information on Bt Cotton, GRAIN has set up a special section on the GRAIN website that focuses specifically on news and information on Bt cotton: visit <http://grain.org/gol/btcotton>.

The Biowatch Makhathini Research Project

From 2000-2005, Biowatch researched and monitored the socio-economic impact of Bt cotton on small-scale farmers, interviewing farmers, industry, government and researchers. The approach followed for the Biowatch study is best described as a 'political ecology'⁸ one, questioning the links between economics, politics and the power relations that determine who benefits from technological interventions. A study of the political ecology of Bt cotton in India provides some useful parallels for South Africa.⁹ For more information about how the Biowatch Makhathini Research Project was carried out, see the *Box: Monitoring Bt cotton in South Africa*.

The Community

The study area for this research focused on the Makhathini Flats and Pongola Floodplain but also included farmers from the Mnqobokazi, Hlabisa and Dondotha areas, all within the municipality of Umkhanyakude. Interview sites on the Makhathini Flats and Pongola Floodplain included Mjindi, Ndumu and Bambanana. Both irrigation and dry-land farmers were interviewed. Farm sizes can vary considerably with farms from anything between 0.5 hectares (ha) and 43 ha with cotton usually grown on 1.5 to 10 ha plots. Almost all farmers practice mixed-cropping with maize, vegetables, beans, cowpeas and some sugarcane as an additional cash crop. None of the farmers interviewed kept any record of purchases, yields, amounts of insecticides sprayed. It can be safely assumed that hardly any small-scale farmer in the study area keep farming or financial records.

The Pongola River system is at the centre of this area and uniquely for South Africa, forms a floodplain of some 10,000 ha along the eastern foot of the Lebombo Mountains. The floodplain system incorporates about 90 pans¹⁰ that form feeding grounds for several migratory species but also provides crucial resources for local people, including fish, grazing, arable land, fuelwood, and materials for building and craftwork.

The community of Umkhanyakude is extremely poor. There is a 53% unemployment rate,

6 - For example see: GRAIN, 2004, *GM cotton set to invade West Africa. Time to Act!* - grain.org/briefings/?id=184 Also see 3-year study of Bt cotton in Andhra Pradesh where alternative methods of pest control is discussed: grain.org/research/?id=302

7 - GRAIN, 2005, USAID: *Making the world hungry for GM crops*, GRAIN Briefing, grain.org/briefings/?id=191

8 - "Political ecology is a term ... which variously queries the relationships between economics, politics and nature, and combined represents an explicit alternative to 'apolitical' ecology, or approaches that typically tend to ignore the influence of political economic forces and institutions, and are often driven by market-orientated 'technofixes'" (Robbins, P. 2004. *Political Ecology: A critical introduction*. Blackwell).

9 Stone, G. 2004. 'Biotechnology and the Political Ecology of Information in India.' *Human Organisation*, Vol. 63, No.2.

10 Pans - can be defined as 'a near-level shallow, natural depression or basin, usually containing an intermittent lake, pond, or pool'



Photo: Woman hauling bagged cotton in South Africa



11 - Statistics South Africa 2002. *Measuring rural development. Baseline statistics for the integrated, sustainable rural development strategy*. Pretoria. Statistics South Africa.

12 - Dependency ratio is a measure of the portion of a population that is composed of people too young or too old to work and is often used as an indicator of the economic burden of a society. Poor households tend to have higher dependency ratios (Chronic Poverty Report, 2004). In 2003, the South African average was 56%, the KZN average was 63% and the dependency ratio for the study group was 70% (Health Service statistics, 2005).

13 - Gouse, M., Kirsten, J., Shankar, B., Thirtle, C. March 2005. *Bt Cotton in KwaZulu Natal: technological triumph but institutional failure*. www.agbiotech.net.com

14 - ICTSD, 2003, "Elimination of Cotton Subsidies: A Development Deliverable for Cancun", Bridges. Year 7 No. 4 - May 2003

15 - Hofs, J.L. and Kirsten, J. 2001. *Genetically Modified Cotton in South Africa: The Solution for Rural Development?* Working Paper 2001-17, Department of Agricultural Economics, University of Pretoria and CIRAD.

16 - Gouse, M., Kirsten, J. & Jenkins, L. 2002 'Bt Cotton in South Africa: Adoption and the impact on farm incomes amongst small-scale and large-scale farmers', Working Paper 2002-15. Dept of Agricultural Economics, University of Pretoria.



Photo: Picking cotton in South Africa

compared to a 37% national average¹¹ and there are few employment opportunities. The dependency ratio¹² is very high with an average household size of eleven people with eight dependants per household. The average literacy rate is 76% compared to the national figure of 90% but over the age of 47 years it drops drastically to 48% only. The majority (76%)¹³ of farmers are older than 40, implying a high level of functional illiteracy amongst them. The area has a high rate of HIV infection, with an estimated 41% infection rate under pregnant mothers.

Even though agriculture for food and cash crops is important for the survival of rural families and 48% of the population is engaged in field crop farming, few rely on agriculture as their only means of survival. Indeed, only a small number of farmers see the sale of farm products as a main source of income. Other sources of income include various government welfare payments. This differs widely from the majority of small-scale farmers in the rest of Africa.

Since the apartheid years, this area has been a repository of quick fix, high profile development plans to gather political support and showcase government concern for local economic development. None of these projects have managed to address the underlying causes of poverty and underdevelopment in the area.

As the Table: *Makhathini: a repository of*

development interventions shows, this history of intervention and erratic support to farmers in the Makhathini Flats is not typical of South Africa, it being a large development scheme, with an experimental farm and some extension services. Bt cotton was introduced with government and industry support and this made some success possible. Any problems experienced here will be harder to overcome in other areas where there is less support. It is clear, therefore, that initial results from the Makhathini cannot serve as a model for Africa.

What is crucial about the Makhathini Flats is that it is the largest concentration of small-scale cotton farmers in South Africa and this played an important role in the decision to introduce Bt cotton to the area.

Cotton farming in South Africa

The cotton market is notoriously volatile, heavily subsidised, and driven by the US, China and the EU - all subsidising their farmers to the tune of US\$2.3 billion, US\$1.2 billion and US\$700 million a year respectively.¹⁴ The primary problem faced by cotton farmers in South Africa, as in the rest of Africa, is not one of low crop yields due to insect attack but the absence of an equitable price for the cotton they produce. International prices are below the thirty-year average, and 2000/01 saw the lowest cotton prices in 29 years.

Cotton is a relatively minor crop in South Africa and the combined value of lint and seed production is not more than 1% of the total value of agricultural output. Cotton production is dominated by around 300 commercial farmers who grow on average 95% of South Africa's cotton. Small-scale farmers make up the rest with an ever-decreasing share of the market, 4% in 2000/1, an 8% drop from 12% in 1997/98 season.¹⁵ During a good year, about 3500 small scale farmers produce cotton and about 3000 of these farmers farm on the Makhathini Flats and surrounding area (KwaZulu Natal Province) while the remaining farms are in the Tonga area (Mpumalanga Province).

Cotton produced in South Africa is on average 70% under dryland and 30% under irrigation. Between 2000 and 2004, the area under cotton fell by 81% with most of this reduction seen in areas under dryland cotton which fell by 77%. This fall is due to a number of factors, including low cotton prices, a strong Rand, more attractive returns from competing crops such as maize and sunflowers, and the dry conditions experienced

Table: Makhathini: a repository of development interventions

1902	Makhathini floodplain is reserved for state development
1930	Labour in the area is assigned to the sugar industry, through an agreement between the Natal sugar industry and Johannesburg mining houses.
1948	Nationalist government comes to power, needs to create jobs for ex-servicemen and loyal voters, and implements a series of irrigation projects around the country
1974	The Pongolapoort Dam (Jozini Dam) is built, the largest in South Africa, to provide water for white sugarcane farmers. The process is accompanied by severe ecological and social disruption and many local communities lose livelihoods due to the disruption of flood cycles, and the loss of fishing and other natural resources.
1978	Cotton is first introduced in the area by the J. Clark Cotton Company
1984	Floods from the release of dam water destroy crops and local water committees are formed to influence the timing of releases and accommodate community needs.
1980s	The Mjindi Irrigation Scheme is established as part of the formation of a black homeland in Zululand. 4,500 families are removed from the area and some are resettled onto 10 ha plots. 80% of people allocated land on the scheme are outsiders.
1989	Height of cotton production among small farmers on the Makhathini, with 3,500 ha of cotton under irrigation
1991	Demise of the Department of Development Aid. This was the home department of Mjindi Farming, the parastatal that managed the irrigation scheme from 1984.
mid-1990s	Mjindi Farming changes its role to become a manager of irrigation water.
mid-1990s	Lebombo Spatial Development Initiative is announced, focused on upmarket tourism, agribusiness, and plantation farming.
1998	Genetically engineered Bt cotton is introduced in the Makhathini Flats
1999	Media reports emerge of the 'astounding' yield increases of smallholder cotton farmers in the Makhathini Flats
2000	Severe flooding results in substantial financial losses for farmers.
2001/2002	Makhathini Cotton Company (Pty) Ltd and ginnery is launched in partnership with Danish and local investors as a public-private partnership with a R269 million government investment. The project is targeted by the government as a Black Economic Empowerment initiative, focused on emerging farmers. Makhathini Farming leases land from farmers for large-scale GM cotton production.
2002	Closure of the cotton ginnery in Pongola. This is followed in 2003 by the withdrawal of Vunisa Cotton and the Land Bank from the area and a withdrawal of their financial support to smallholders.
2003	TJ Buthelezi, chairman of the local Ubongwa Farmers' Union, stands next to Robert Zoellick, US trade representative, to announce that the US were taking the EU to the World Trade Organisation to challenge its stand on genetic engineering.
2003 – 2004	Continued drought, low cotton prices and lack of credit lead to drastically reduced cotton plantings.

Source: Bembridge, T.J. 1991. Farmer characteristics, innovativeness and cotton production at Makhathini Irrigation Scheme, KwaZulu. *Development Southern Africa*, 8(1): Institute of Natural Resources (INR) 2002. 'Proposed Development of an Agricultural Estate on the Makhathini Flats.' Environmental Scoping Report.

during planting time.¹⁶

This decline in cotton production has had an impact on jobs, with mainly seasonal workers losing employment at the rate of one job per hectare of cotton not planted. For example, De Grassi reports on a loss of 58,000 jobs in the cotton sector as a whole between 1998 and 2003.¹⁷

Cotton is planted between September and December, depending on when the first rains fall. As soon as the first shoots develop, farmers spray for cotton aphids (*Aphis gossypii*) and at six to eight weeks they spray for jassids (*Jacobellia fasciialis*). From the time that buds develop, they spray for bollworm and altogether apply five to eight sprayings per season for pests. Harvesting usually takes place between March and June. Weather

17 - De Grassi, A. 2003. *Genetically Modified Crops and Sustainable Poverty Alleviation in Sub-Saharan Africa: An Assessment of Current Evidence*. Third World Network. grain.org/research/?id=99



Table: Annual weather patterns: 1998-2004

Season	Period covered	Weather conditions	Rainfall (mm)
1998	Plant end 1997 Harvest in 1998	Normal	608.9 mm
1999	Plant end 1998 Harvest in 1999	Normal	856.1 mm
2000	Plant end 1999 Harvest in 2000	Flood conditions during February & March 2000	1064.7 mm
2001	Plant end 2000 Harvest in 2001	Flood conditions during November 2000	652.2 mm
2002	Plant end 2001 Harvest in 2002	Drought	277.4 mm
2003	Plant end 2002 Harvest in 2003	Drought	321.4 mm
2004	Plant end 2003 Harvest in 2004	Drought conditions during planting window at end of 2003; rains in late January too late for cotton crop	601.4 mm

The rainfall figures were measured at the Mkuzi Game Reserve weather station and obtained from the Institute of Soil, Climate and Water, Pretoria

conditions are erratic and can fluctuate between droughts and floods.

Who's who in Makhathini?

There have been a number of actors involved in Makhathini, all trying their best to make Bt cotton a success story.

Government

The Department of Agriculture has been behind the introduction of Bt cotton since the beginning in 1997 as part of a public-private partnership. The Land Bank (funded by the national government) has also been heavily involved in providing financial support (R269 million¹⁸) from 2002 onwards. The provincial government has also supported Bt cotton as part of their 'Green Revolution' policy, including mechanisation.¹⁹ So we find that both national and regional governments have injected money into supporting the expansion of Bt cotton in this area. This is a repeat of history of using Makhathini to showcase political ideologies and quick-fix solutions. However, such "solutions" appear to only benefit a handful of people, mostly from outside the community.

Marketing Monsanto

Monsanto's main task, apart from the provision of the Bt technology, has been marketing. Monsanto

has embarked on a promotional campaign in South Africa that targets both small and large-scale farmers, as well as sustaining the necessary pressure on the government. Monsanto promoted Bollgard™ (the Bt cotton) directly to farmers, such as advertising on minibus taxis; and holding farmers' days where farmers receive hats, pens, and pocket-knives. One Monsanto official said that they market Bollgard™ by telling farmers "*the muti is in the seed*", "muti" being the term used for traditional medicine in South Africa. The message being sent out to farmers is that should you use Bollgard, you will be rewarded in multiple ways: better yields and funding to purchase farming equipment. For an impoverished community this is more than enough incentive to use Bollgard.

Monsanto has also been uncomfortably close to the Ubongwa Farmers Association, for example donating in 2001 US\$10,000.²⁰ The Chairperson of this association, Buthelezi, has at times rented out some of his land to Delta & Pine Land and Monsanto for the planting of Bt cotton trials. He and other members of the steering committee have frequently travelled abroad to convince the world at large that Bt cotton has been the answer out of poverty for them.

Makhathini Cotton Company (Pty) Ltd

In 2002, in the middle of this study period, there was a radical change when a new company,

18 - Oricho, G. 2004. Report of the Acting Chief Executive Officer of the Land Bank to the Parliament of South Africa.

19 - Linscott, G 2002. 'Green Revolution gets a R10 million boost.' *The Mercury*, Tuesday May 14, 2002.

20 - Tania Sandberg. *Farmers Weekly*, 17 November 2000



Box: Bt Cotton in Andhra Pradesh - a three year assessment

In 2002, shortly after the start of commercial growing of Bt cotton in Andhra Pradesh, the Deccan Development Society (DDS) and the AP Coalition in Defence of Diversity (APCDD) began their research on Bt Cotton in Andhra Pradesh with a particular focus on the cotton district of Warangal. In their words, "we had no idea what we were walking into". Amongst the hype surrounding Bt cotton as a panacea for farmers and the environment, two scientists Dr Abdul Qayum, and Mr Kiran Sakhari went about the job of unravelling the agro-socio-economic mystery of Bt cotton.

The scientists selected "a transparent and open methodology", being close to the farmers and gathering information from them on a regular fortnightly basis. Their data collectors were village based grassroots researchers with a deep understanding of agriculture. No other research group on Bt cotton in India had done season-long studies, and a job as thorough as this. Most groups came once a while after hearing of the cotton disaster, collected data at that point of time and went back. No one stayed continuously with farmers and farming communities to record their changing perceptions about Bt cotton. This makes the present study a unique one.

After three years of study, the truth is out. Here is a summary of what Mahyco-Monsanto Bt hybrids have brought to Andhra Pradesh:

- Low yield - Non-Bt has, on an average, surpassed Bt in terms of yield by nearly 8% with 12% less expense.
- No reduction in pesticide use - In reality, the volume of pesticide use by both Bt farmers and Non-Bt farmers was so little that it was untraceable (2% of their total cultivation costs).
- Disastrous losses for farmers - The three year average tells us that the non-Bt farmers earned 60% more than Bt farmers. In place of profit, Bt cotton, especially the Mahyco-Monsanto varieties, brought untold misery to farmers culminating in violent street protests and the burning of seed outlets in the city of Warangal. Farmers tied up Mahyco-Monsanto representatives in their villages and the police had to go and rescue the hapless salesmen.
- Increased cost of cultivation - On average, Bt farmers incurred 12% more costs in cultivating their Bt crops compared to non-Bt cotton farmers.
- Increased spread of disease - Researchers found that a special kind of root rot was being spread by Bt cotton. Farmers came out with complaints that they were not able to grow other crops after Bt because it had infected their soil very badly. As against this, the soil in which the farmers grew non-Bt hybrids was extremely friendly to other crops.

What is most disturbing is that Mahyco-Monsanto continue to insist that yields of Bt cotton in Andhra Pradesh are up. Mahyco-Monsanto commissioned a study to a market research agency, and with its devious manipulation of data claimed that Andhra Pradesh farmers had seen a five-fold increase in yield compared to non-Bt yields. This is direct contradiction to the evidence amassed by DDS and APCDD and shown in farmers' interviews (see below of details of the film).

UPDATE:

Since the publication of the report, the Genetic Engineering Approval Committee (GEAC) has rejected the growing of all three Monsanto varieties of Bt cotton in Andhra Pradesh due to their failure, as described in this box. Furthermore one hybrid Bt cotton (Mech-12 Bt) has been banned throughout South India. The main worry is that old stocks of Bt cotton (estimated to be a minimum of 300,000 bags) will continue to be sold in Andhra Pradesh. Farmers' organisations and NGOs have all called for these stocks to be destroyed.

NOTES:

The study Bt Cotton in Andhra Pradesh: a three year assessment provides the data and details on the three year study. To complement the report, an associated film Bt Cotton in AP; a three year fraud, brilliantly captures the mood and feelings of the farmers as they are led up the garden path by the false promises of a ruthless industry. Both these are historic documents in analysing the impact of Bt cotton in India. The first film is also available in French.

To obtain a copy of the report online: <http://www.ddsindia.com> or <http://grain.org/research/?id=302>

To obtain a copy of the film or a copy of the report, please contact:

Deccan Development Society
101, Kishan Residency,
Street No. 5,
Begumpet, Hyderabad - 500 016
Andhra Pradesh,
India

E-mail: hyd1_ddshyd@sancharnet.in

Telephone: +91-40-27764577 or +91-40-27764744

(The text in this box is extracted from the report.)



Field trials and commercial releases of Bt cotton around the world

Argentina	Monsanto's Bt cotton approved in 2001, yet only planted on an estimated 5% of total cotton area in 2002/2003.
Australia	Bt cotton introduced in 1996. Reports are mixed. Initially pesticide use declines dramatically then increases year after year. Farmers do not see economic benefits. Still, by 2002/2003, 30% of total cotton crop is Bt cotton and this increases to 80% in 2004 with the release of Monsanto's Bollgard II variety, which involves less stringent insect resistance management plans.
Brazil	In March 2005, following the adoption of a new biosafety law strengthening its powers, the pro-GM National Technical Biosafety Committee approves the commercial release of Monsanto's Bt cotton.
Burkina Faso	In 2003, Monsanto, Syngenta and Burkina Faso's Institut National de l'Environnement et la recherche Agronomique (INERA) begin field tests of two Bt cotton varieties without the involvement or consent of the national biosafety committee which is tasked with developing a national regulatory regime for GMOs.
China	Bt cotton released in 1997. Currently Bt cotton is planted on over half of the national cotton area. Bt cotton seed costs around 50-60% more than regular seed, but there is a high level of unauthorised use. While Bt cotton has reduced pesticide use, it still remains high and there are problems with secondary pests. In Shandong province, farmers spray 12.7 times per season on Bt cotton. It is also widely assumed that insect resistance will soon be a major problem.
Colombia	Monsanto imports Bt cotton in 2002, without an environmental clearance. Popular legal action results in the suspension of the authorisation.
Costa Rica	Monsanto conducts field trials without regulatory oversight in 1992.
Egypt	Monsanto and Egypt's Agriculture Genetic Engineering Research Institute currently collaborating in field trials of Bt cotton. They claim commercial introduction could take place as early as 2006.
India	In 1998 Monsanto's first field trials of Bt cotton disrupted by farmer protests. Commercial introduction of Bt cotton occurs in 2002. By 2004, Bt cotton accounts for 6% of total cotton area and is only permitted for cultivation in six states. Reports from Andhra Pradesh, one of the country's major centres of cotton production, bring to light the failure of Bt cotton. In May 2005, the Genetic Engineering Approval Committee rejects Monsanto's application to renew its temporary authorisation for the sale of its three Bt cotton varieties in Andhra Pradesh.
Indonesia	Monsanto's Bt cotton commercialised in South Sulawesi province in 2001. However, two years later it is withdrawn after its failure to perform triggers farmer protests. Due to poor harvests, some 70% of the 4,438 farmers growing Bt cotton were unable to repay their credit after the first year of planting.
Kenya	Monsanto imports Bt cotton into Kenya in 2004 for field trials.
Mexico	Bt cotton introduced in 1996. Government subsidises purchase of Bt cotton seeds. In 2002/3, 25% of the national cotton area planted to Bt cotton, slightly less than the percentage in 2000.
Philippines	In January 2005, the Cotton Development Authority signs a memorandum of agreement with the Philippine Rice Research Institute to begin field trials of Bt cotton.
Senegal	National cotton company (SODEFITEX) and Monsanto undertake field trials in the Senegal River Valley without notifying regulatory agencies or informing the local population. SODEFITEX backs away from project after early results show no reduction in pesticide use.
South Africa	Bt cotton approved for commercial planting in 1997. Adoption very rapid and by 2002/3, an estimated 75% of national cotton area planted to GM cotton.. In 2003/4 only 35,700ha of cotton was planted, an 80% reduction since 2000, ascribed to low world prices and droughts. In 2004/5 the area planted was 21,700 ha, an extraordinary 40% drop in area planted to cotton in one year. It is estimated that 60% of GM cotton is Bt cotton and 30% RR cotton. Small-scale farmers. 90% of whom adopted Bt cotton, are in debt with the total debt amongst small-scale cotton farmers in Northern KwaZulu Natal estimated at over US\$ 3 million in 2004.
Thailand	Monsanto imports Bt cotton seeds in 1995 and begins field-testing in 1997. In 1999, farmer's groups monitoring plantings of cotton find samples taken from locations outside Monsanto's approved sites testing positive for the presence of the Bt gene. It is estimated that 8,000 hectares of Bt cotton are being grown illegally. An alliance of 35 farmer groups and NGOs threaten to stage a mass rally unless the government responds to their calls for a stop to the testing and commercial release of genetically engineered crops. The government reacts by setting up such a ban and terminating field trials of Monsanto's Bt cotton.





USA	Around 40% of the cotton area in the US is Bt cotton. Studies show reduction in pesticide use since Bt cotton introduced in 1996, but now secondary pests are becoming an increasing problem.
Vietnam	Although IPM techniques have dramatically reduced the use of pesticides on cotton in Vietnam over the last two decades, Vietnam Cotton Company is pursuing Bt cotton in an effort to expand dry-season irrigated cotton production. Field trials of Bt cotton have taken place.
Zimbabwe	Monsanto planted a Bt cotton crop in 1998 without official permission. Crop was burnt before flowering when uncovered by authorities.

For more information: visit <http://grain.org/go/btcotton>, a resource centre on Bt cotton around the world, providing relevant news, links and documents.

Makhathini Cotton Company (Pty) Ltd appeared on the scene. Makhathini Cotton is a private company that obtained finance from Danish donors and financial support from the government through the Land Bank to build a ginnery and expand the irrigation scheme. As the majority of farmers had debts with the original company Vunisa Cotton (who supplied everything that a cotton farmer needed plus credit), many farmers switched to delivering their cotton to the new Makhathini Cotton gin (a cotton gin separates the cotton from the seed). This meant that few of the loans were recouped and as a result, Vunisa Cotton closed down, leaving Makhathini Cotton with a monopoly in the area. The Land Bank used to operate through Vunisa Cotton and because they could also not recoup monies owed to them, withdrew direct credit support to farmers and instead now supports Makhathini Cotton who collects outstanding debts for them. Makhathini Cotton leases land from the farmers to plant cotton and has plans to hugely expand the area under irrigation, raising questions around water availability and environmental impact on the floodplain. It employs farmers as labourers on their land and put in place a one-channel marketing system that is in control of ginning, credit and irrigation.

Key Findings and Conclusions from the Makhathini Research Project

Here we summarise the key findings of the Makhathini Research Project carried out by Biowatch. An academic-style report with full details of the Makhathini Research Project will be available in late-2005.

Adoption rates were high in the first three years and then dropped dramatically

The initial high rate (90%) of adoption of Bt cotton can be attributed to a number of factors, including the marketing strategies of Monsanto

and Vunisa Cotton as well as political pressure from farmers' leaders. Another factor that played a role in farmers' adoption of Bt cotton is simply that their choices of cotton varieties have been very limited. The seed distributors offered twelve varieties countrywide in 2001 yet in 2003, only four varieties, three of them GM.

The total area planted by the interviewed farmers declined from 276 ha in 2000/01 to 193 ha in 2001/02 and 180 ha in 2002/03. In total 66% of the farmers reduced the area planted to, or completely stopped planting, cotton. By the end of 2003, very few farmers planted cotton, with most farmers pointing to the successive drought and lack of credit as the reason. The price of cotton also plays a role in farmers' decisions with the price recently dropping to a very low 50 US cents per kilogram. In 2004, only 700 farmers delivered cotton at the Makhathini Cotton ginnery - down from a total of 3,000 farmers planting cotton in 2000, equivalent to an 80% drop in farmers growing Bt cotton (see *Graph: Reducing Bt cotton production* for an example of how farmers are stopping to grow cotton).

Farmers have accumulated massive debts and the community and government is subsidising cotton production

During the first interviews held in 2001, farmers were generally positive about the income derived from Bt cotton, even though most of them lost their crops in the 2000 floods, as they felt that during the previous years there were good incomes from Bt cotton. During the second set of interviews in 2003, farmers were asked more detailed questions about cost and income from Bt cotton but also about other sources of income as well as what the situation was with their loan repayments to their creditors.

In the final analysis of income, only four farmers of the total sample of 36 farmers made a profit. The

total loss of these 36 farmers came to US\$ 83,348. The study found that most of the farmers had accumulated a massive debt. In a 2004 interview, a Land Bank official said that the debt figure for the whole area totalled just over US\$ 3 million owed by 2,390 farmers, an average of US\$ 1,322 per farmer. Around 80% of farmers have defaulted on their loans.

Cotton production in the area is dependent on a system of credit. Until the mid-1990s a strong welfare development approach prevailed in the area and there is a history of soft loans.²¹ Vunisa Cotton was acting as an agent for the Land Bank and introduced different systems for dealing with the repayment of loans and the approval of new applications.

These small-scale cotton farmers have always been dependent on a credit system, but the introduction of Bt cotton has increased their exposure and risk, as it is more expensive to buy. Because of the aggressive marketing campaign there was a high level of adoption, so many more farmers are in debt than might have been the case otherwise.

Low cotton prices have had a devastating effect in all of Africa. Farmers started planting Bt cotton when the prices had been better. One farmer said: *"When the prices drop you can't leave the crop at home, you can't eat it, you can't feed it to the chickens. You are forced to sell it for whatever small price you can get. Farmers do not have the power to influence markets"*. Another farmer commented: *"Four years*

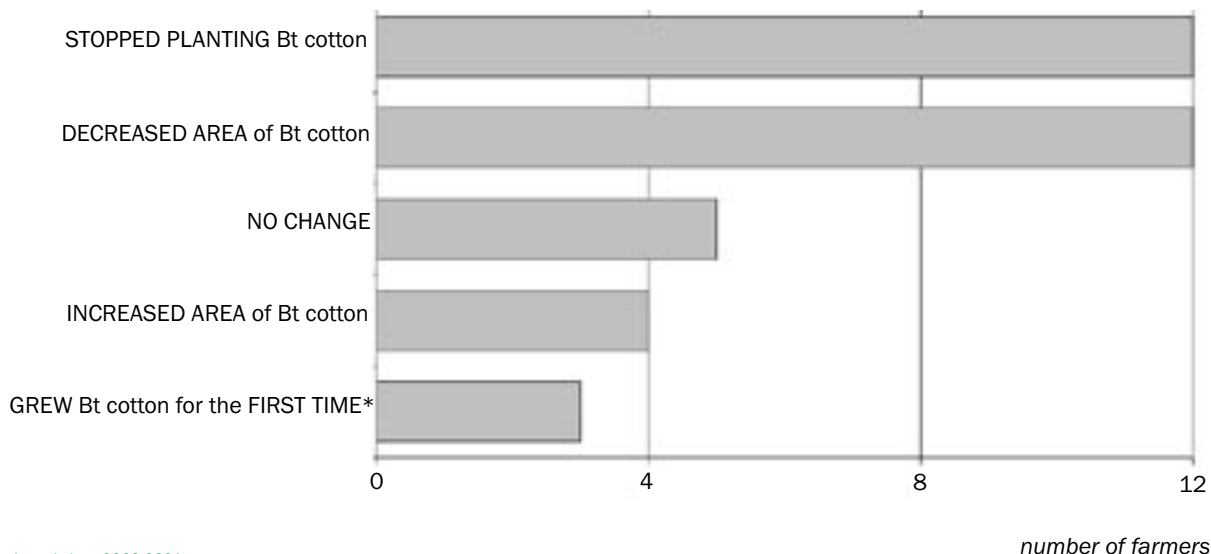
ago we were told we would make lots of money but we work harder and make nothing".

The introduction of the expensive Bt cottonseed occurred at the same time as a depression in world cotton prices, a strengthening Rand and subsequent droughts, cutting margins for farmers and making it unprofitable to grow cotton. (See *Table: Annual weather patterns: 1998-2004* on page 18)

Once access to credit dried up, farmers that continued with cotton production started using other family resources to finance their production costs, such as the salaries of their spouses. Others, that had borrowed money from family and neighbours, are now concerned as to how they will pay it back. Some farmers said their poor cotton harvests negatively affected their status in the community, which had an impact on family members and affected their family relationships. Non-farm income also included child grants, disability grants and pensions. In other words, welfare grants from the State aimed at supporting the community and alleviating poverty, as well as family income is used to subsidise cotton growing in the area. If farmers substitute credit with non-farm income and the burden of debt thus shifts to the community, it must have major implications for their socio-economic status, in terms of access to health care, schooling, and nutrition for example.

Graph: Reducing Bt cotton production

Adoption Rates of Bt cotton for 36 farmers between 2000 – 2003



Farmers planting Bt cotton still use pesticides.

In contrast with reports from China, the savings in pesticide use have not been high in Makhathini, mainly because farmers originally “underused” pesticides anyway.²² Small-scale farmers in South Africa have to deal with a range of pests and they use broad-spectrum pesticides to control this. All the farmers still have to spray for secondary pests such as aphids and jassids (sometimes known as leafhoppers), which would otherwise reduce yields. Since 2000 new insect pests appeared and especially stink bugs have caused extensive damage.²³ This correlates with reports from the US and China where the stink bug has also emerged as a major new pest. All Bt crops must be grown amongst non-GM varieties within refuges to avoid insect resistance to Bt building up. However, as these farmers do not plant refuges, it is expected that insect resistance will build up quickly, forcing them to go back to the old spraying patterns, erasing any environmental benefit gained.

Bt cotton does not address farmers needs and constraints

Underlying the persistent poverty in this region is a history of dispossession and discrimination. Farmers’ key constraints are lack of markets and infrastructure, and lack of cash, making high input investments at the beginning of the season, such as GM seeds, an enormous financial risk. Erratic weather patterns resulting in either droughts or floods also cause problems. The first adopters of Bt cotton were the farmers that were most able to weather such risks and overcome constraints: older farmers with additional non-farm income, more livestock and larger farms, in other words, the better-off farmers with access to credit. Another constraint for farmers is insecure land tenure as most farmers have access to tribal land only.

Bt cotton has benefited better-off farmers and businessmen at the expense of the poor.

It is no surprise that there has been political tension in this area over the years, with such a history of displacement, political favouritism and resource disputes. Bt cotton has contributed to the conflict in the area by favouring better-off farmers and in particular strengthening the political power of the Ubongwa Farmer’s Association. This power was used to lobby for the earlier release of the water in the Pongolapoort Dam to favour cotton farmers, a practice that is not in the interest of the area’s women farmers who grow food crops.

A further concentration of power took place with the introduction of the Makhathini Cotton Company Project. This project is in line with government’s policy of agricultural reform that favours better-off, ‘entrepreneurial’ farmers, mechanisation and consolidation of land. Government funding now flows to a single company that leases land from the farmers to plant GM cotton on a large scale. Makhathini cotton also negotiated a deal with the Nyawo Tribal Trust to whom the land belongs, to lease the land in exchange for a 10% profit. Farmers are becoming further removed from their land and knowledge and do not participate in the farming operations but apparently they can choose to be ‘employed’ in their own fields to do menial tasks, such as weeding.

GM cotton would therefore appear to perpetuate the injustices of the past and exacerbate the inequities in land access and ownership.

There is little support for farmers and no implementation of biosafety practices.

There is an utter lack of awareness amongst the farmers of GM cotton and its implications. Bt cottonseed is more expensive than other cotton because of the license fee payable to Monsanto. Every grower must sign a Monsanto Technology Agreement, called a “certificate” by the small-scale farmers, agreeing not to save or exchange seed or ratoon²⁴ any Bt cotton and to plant a refuge. During the 2001 survey, only one farmer understood the contents of the contract. Of the 36 farmers surveyed in 2003, only 6 indicated that they understood the contracts or knew about refuges. Monsanto clearly did not consider the high illiteracy rate amongst their small farmer clients nor the dominant language spoken by them (Zulu).

Farmers in the area get little support, and rely on seed and chemical sales people for information. There is no monitoring of insect resistance nor has any environmental impact assessment been done in the area. Officially the KwaZulu Department of Agriculture is doing extension work in the area. However, when farmers were asked where they get advice from, none mentioned government extension services while a number said that they had no advice at all. Most of the respondents indicated that they get advice from Vunisa (which was still operating at the time), Monsanto or Delta & Pineland. Buthelezi, from the Ubongwa Farmers Union, was also singled out as an advisor.

21 - Soft loans are loans from government - they are easily written off as part of the welfare approach that used to prevail in the area. Farmers also know they can delay payment. This has now changed and instead of obtaining credit from government, they use family income to finance cotton farming.

22 - Shankar, B and Thirtle, C. 2003. *Pesticide overuse and Bt cotton – evidence from South Africa*. Paper presented at the 7th ICABR Conference, Ravello, Italy.

23 - Hofs, J. & Kirsten, J. 2002 ‘Genetically modified cotton in South Africa: the solution for rural development’. CIRAD/ University of Pretoria Working Paper, University of Pretoria

24 - Ratoon: When cotton is cut, and allowed to re-grow the next year.



Conclusion

Bt cotton has not been the answer to the problems of the Makhathini farmers and has proved to be unsustainable. Their problems are highly complex and they cannot be resolved by quick techno-fixes. In the specific context of Makhathini, we find that GM technologies had some initial success, but in the end proved to be too risky for small farmers, leaving them demoralised, in debt, and ultimately poorer. It has led to a concentration of power in the hands of fewer companies, contributing to greater control by these corporations. It has also encouraged the concentration of farms, the deskilling of farmers and will inevitably lead to their displacement from the land.

GM crops should not have been introduced before a serious assessment of the needs of small farmers

in South Africa took place, with an in-depth look at the country's agricultural, food, and rural development policies and in particular, how they benefit the poor. Ironically, both government and industry promote this technology as the fix for poor farmers - a technology that has been developed for industrial agriculture.

Yet the results are clear - Bt cotton has failed the Makhathini farmers. And from this, it is clear that Bt cotton and many other GM crops will fail the majority of farmers throughout Africa. In Africa, small-scale farmers should be able to make choices that empower them and provide them with opportunities that will ensure food security and sustainable livelihoods, not dependency and debt. 2



Elfrieda Pschorn-Strauss

This paper has been written by Elfrieda Pschorn-Strauss, a researcher with Biowatch South Africa. The research has been done with the assistance of Lawrence Mkhaliphi, Charles Louw, Wendy Forse and Gwendolyn Wellmann.

Elfrieda Pschorn Strauss first became involved in the environmental NGO sector almost 15 years ago. In 1999 she set up the Biowatch South Africa office and has worked in research and advocacy for Biowatch until January 2005 when she joined GRAIN as the Anglophone Africa Programme Officer. This is a new position, and she will focus on agricultural research and information support to promote autonomy amongst small-scale farmers and local communities in Africa.





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Sprouting Up...

A Global Week of Action against GM, in Andhra Pradesh, India

GRAIN & DDS

Southern Encounters – an international consultation on Bt cotton

In *Southern Encounters - an international consultation on Bt cotton* held in Hyderabad, in the South Indian State of Andhra Pradesh (14-15 April 2005), farmers from India, Indonesia, Mali, South Africa, Canada, and scientists and researchers from Malaysia, Thailand and the Philippines denounced GE technology as they narrated a common experience with Bt cotton and other genetically engineered crops such as Bt maize, Bt soya, GM canola and GM papaya (see *Sprouting up: GM Papaya*).

As the agri-biotechnology industry argues that GM crops are needed to combat hunger in the South, the evidence demonstrates that industry is more concerned about its own profits. Other arguments by the industry in continuing to grow GM crops include a reduction in pesticide use and increased profits for small-scale farmers, all of which are turning out to be untrue.

In this issue of Seedling we have an article on Bt cotton demonstrably failing farmers in South Africa, and at Southern Encounters, details were given of a three year study in Andhra Pradesh, India, showing the same thing: that Bt cotton has failed farmers (see the Box on page 19).

An Indonesian farmer recounted how they were promised that Bt cotton would yield 3 to 5 times higher than local varieties but in the end produced much lower yields of local varieties. Many Indonesian farmers like him suffered considerable losses from planting Bt cotton. Along with others, he decided to use direct action such as burning Bt cotton fields and joining street rallies to protest and demand compensation.

In Thailand, in 1999, farmer's groups found GM contamination of their cotton. It was estimated that 8,000 hectares of Bt cotton are being grown illegally. An alliance of 35 farmer groups and NGOs threatened to stage a mass rally unless the government responded to their calls for a stop to the testing and commercial release of genetically engineered crops. The government reacted by terminating field trials of Monsanto's Bt cotton.

In the Philippines, the Department of Agriculture approved Monsanto's Bt maize in 2002 for commercialisation. The area planted to Bt maize has increased, but farmers' incomes have not. The same government department plans to introduce Bt cotton, GM rice and GM papaya in the next two years.

New coalitions against GM

SOUTH AGAINST GENETIC ENGINEERING LAUNCHED

As part of the Global Week of Action, a new coalition *SOUTH AGAINST GENETIC ENGINEERING (SAGE)* was launched. With over 60 members from across South India, the coalition has civil society groups, farmers, scientists, academics, consumer groups as its members and is led by the Deccan Development Society.

ANDHRA PRADESH COALITION FOR FOOD SOVEREIGNTY

Ten civil society networks representing over 120 NGOs coming from 15 districts of Andhra Pradesh have formed a new coalition called Andhra Pradesh Coalition for Food Sovereignty under the leadership of Deccan Development Society. The new Coalition has for its aims, achievement of Community Food Sovereignty, networking of food farmers especially from Dryland districts and to create a movement against the corporatisation of agriculture.

Women farmers protest in front of ICRISAT (the International Crop Research Institute for Semi Arid Tropics)

Around 500 women farmers demonstrated outside ICRISAT near Hyderabad on the 15 April 2005, an institution which has turned its back on small-holder farmers. Instead ICRISAT, a member of CGIAR, have been blinded by big business and biotechnology. So the farmers were demanding that ICRISAT stop bending over backwards for transnational corporations.

"Please hand us back our germplasm. Close down your gene banks. They have already turned into Gene Morgues. Now they will be turned by you into seeds for predatory corporate profits."

**"THIS IS OUR HERITAGE,
GIVE IT BACK TO US."**

See http://www.ddsindia.com/southernencounters_note.htm for more details

http://www.ddsindia.com/observation_gwa.htm for more details



This article examines how the US government uses the International Agency for Development (USAID) to advance a global agenda for GM agriculture. The focus is on USAID's major programmes for agricultural biotechnology in Africa.

USAID in Africa

“For the American Corporations”

GRAIN



USAID
FROM THE AMERICAN PEOPLE

From the American people” says the USAID logo. A generous gift of financial aid from the “American” people. But in reality, the slogan should be saying “*For the American Corporations*”; USAID is more about imposing around the world a US philosophy, and in this case the US agricultural model and its genetically modified (GM) crops, that blatantly benefits US corporations.

The US currently grows more GM crops than any other country with over 60% of the global GM area. The next country is Argentina with only a 20% share of GM crops, and the other 20% split amongst another 12 countries, though most of these countries grow such a small GM area, that they are statistically insignificant. It is therefore abundantly clear that a GM crop is very much also a US crop, forced upon the world by a handful of US corporations and universities with the backing of the powerful US government. The



27

US government has been desperately trying to convince the world that the US agricultural model is best.

Part of this US model is an array of lax regulations. Got some GM crops to grow or test? Go to the US. Getting GM crops in the US approved is relatively cheap and easy; approximately 100 times less costly than for pesticides and 500 times less costly than for pharmaceuticals. For testing your GM crops, it's even easier: only 3.5% of applications for GM field tests were turned down by the United States Department of Agriculture (USDA), yet the area spanned nearly 200,000 hectares of GM crops, and this includes GM crops grown with pharmaceuticals. As the risk of contamination from these test sites is always a risk, the US regulators are at the point of allowing contamination from field trials to enter the human food chain.

The other part of the US model, is to allow for all aspects of agriculture to be privatised, even the seeds. And GM seeds are the perfect (and only) way to privatise these seeds - with patents.

So what the world needs, according to the US, are lax regulations and seeds that can be patented. Step forward USAID with its slogan *"From the American People"*.

USAID

The US Agency for International Development (USAID) is officially the principal US agency for providing economic and humanitarian assistance to developing and *"transitional"* countries. However, such US foreign assistance has always had the central objective of furthering US foreign policy interests. USAID is very open about this objective, once claiming on their website: *"... the principal beneficiary of America's foreign assistance programs has always been the United States. Close to 80% of the USAID contracts and grants go directly to American firms"*.

And when it comes to agriculture, there is one aspect that really does help certain US multinational companies - the spread of GM crops around the world.

It was in 1991, that USAID launched the Agricultural Biotechnology Support Project (ABSP). Under the direction of Michigan State University, a consortium of private companies and public research institutions came together to ensure the world grew GM crops. Their strategy was to identify suitable crops in various countries

and use them as Trojan Horses to provide a solid platform for the introduction of other GM crops. This platform was comprised of well-funded institutions and scientists who had wholeheartedly embraced GMOs. This in turn provided an articulate, important and powerful domestic lobby to open government doors to US biotech corporations.

At least that was the idea.

ABSP I's (1991-1996) original objective was to bring these GM crops to farmers' fields by supporting its collaborators with the research and development and eventually the commercialisation, including support in regulatory and intellectual property issues. But few of these phase I projects produced potential commercial GM crops.

The problem was that the ABSP I had not provided sufficient funds for all the costs related to national legislation on growing GM crops. Such biosafety legislation to allow for the commercial growing of GM crops is now generally considered essential. Although ABSP I did not get any crops to be grown commercially, they did manage to get many scientists to collaborate with US companies, train these scientists in breeding GM crops and initiate the political processes on biosafety and IPRs.

As from 1998, ABSP I projects were all eventually dropped and a new initiative was formed, called CABIO (Collaborative Agricultural Biotechnology Initiative). CABIO split the original ABSP I into two main programmes, ABSP II and PBS. ABSP II is responsible for the research side of the old ABSP programme but its focus is now on clearly defined *"product commercialisation packages"* and it is no longer interested in long-term research and development projects of GM crops that risk not making it to the field trial stage. PBS continues with and deepens USAID's work at the policy level, which was formerly handled through ABSP. Its goal is to set up *"systems"* in target countries that can bring GM crops to market. This means orchestrating public relations and crafting GM crop approval processes, regulations, and IPR regimes.

After many assessments, USAID decided that ABSP II and PBS would focus on a few target countries. In Africa the countries selected are Egypt (considered part of the near-East by USAID), Kenya, Mali, Nigeria, South Africa, Uganda and Zambia. These are countries where the USAID presence is strong or where the biotech lobby has already made some inroads - in the words of



USAID where the process is “*demand driven*”.

The activities of ABSP II and PBS compliment and reinforce each other. PBS puts in place the systems that facilitate ABSP II's GM crops, while ABSP II serves as a local reference point for the system that PBS advocates. Moreover, both PBS and ABSP II will look to USAID partners with established local networks in order to help move their projects forward, partners such as Chemonics International working in Uganda.

The first task of ABSP II is to set its priority crops, which in Africa currently appears to be led by Bt cowpea and virus resistant cassava. For Mali and Uganda, USAID found that Bt cotton is the only short-term possibility for field trials. However, ABSP II cannot work directly with cotton as internal rules prevent USAID from financing research on crops that compete with US exports. Therefore, ABSP II is putting together longer-term research projects with local scientists, such as multiple virus resistant tomatoes for Mali, whilst working with PBS to prepare the general groundwork for GM field tests. More direct support for Bt cotton from the US will take place through the funding instruments the US has mobilised to counteract international efforts to end its cotton dumping practices.

ABSP II does not implement its projects alone; it is a consortium that works through and with its various partners. One of its key consortium partners is ISAAA, a pro-GM outfit funded by the GM industry, ABSP II and USAID. ISAAA has become famous for its annual reports on global production of GM crops. ISAAA is very active in supporting GM crop projects for ABSP II and similar programmes:

- ISAAA brokers the IPR deals between US corporations and participating public research centres in the South.
- ISAAA offers fellowships to scientists in its target countries to train in GM techniques at US private and public labs.
- ISAAA carries out socio-economic impact assessments of the potential GM crops and, most importantly.
- ISAAA handles much of the “*communication and outreach*” work, through its network of Biotechnology Information Centres.

This makes for a lot of crossover between ABSP II, PBS and ISAAA.

When Mali became a target country for USAID'S

biotechnology programmes under the ABSP II and PBS, ISAAA was there to set up a Biotechnology Information Centre with the national agricultural research centre (the Institut d'Économie Rurale) that re-distributes a French version of ISAAA's electronic biotech news digest in the sub-region.

PBS is also run by a consortium of groups, under the direction of IFPRI (International Food Policy Research Institute), which brings together the bulk of the groups and people involved in USAID's biotechnology policy work. PBS is involved in the establishment of national infrastructures, mainly biosafety legislation, which accepts the growing of GM crops. PBS also unofficially pursues “bilateral responses” through one-to-one dialogues with “target countries”. This form of “bilateral response” therefore furnishes the US with far more influence over national processes than established multilateral processes. This does not mean that the US has reverted to a simple country-by-country approach. PBS's bilateral activities are the basis for regional agendas. The biosafety systems that PBS helps to build in target countries are to serve as “templates” for the region. The eventual goal is to harmonise legislation across regions, creating regional markets for GM crops with uniform regulatory processes. PBS therefore coordinates several USAID-initiated regional processes, such as the West African Biotechnology Network (WABNET) and the South African Regional Biosafety Program (SARB). USAID states that SARB's “*specific objective is laying the regulatory foundation to support field testing of genetically engineered products in four [Southern African] countries by 2003*”. PBS now also manages USAID's biotech collaboration with CORAF (le Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles), the Association for Strengthening Research in East and Central Africa (ASARECA) and the Common Market for Eastern and Southern Africa.

Where PBS really hurts other countries, though, is in its insistence that the US agricultural model of lax legislation is the only practical approach for poorer countries. As PBS say themselves:

“... *modelling biosafety systems for developing countries, based on the complex and resource-intensive approaches for developed countries [i.e. Europe], is inappropriate*”. [From the PBS website at www.ifpri.org]

And

“*If developing countries want the benefits of transgenic products developed for their needs, they will need to*



make it possible, if not easy, to conduct field tests under local conditions ... [PBS] is an important and essential initiative that must become effective as soon as possible to provide an alternative to the anti-technology 'precautionary principle' being disseminated widely by the United Nations Environmental Program and nongovernmental organisations throughout the developing world". [Lawrence Kent from the Donald Danforth Plant Science Center]

In other words, 'let's keep regulations to a minimum, just like we have back in the US'.

These types of statements directly attack the precautionary principle which forms the basis of many other initiatives and agreements such as the Convention on Biological Diversity, the African Union Model Law on Biosafety, and the UNEP/GEF Initial Strategy on Biosafety.

Kenya - the Trojan Sweet Potato

In 1990, two Monsanto executives got in touch with Joel Cohen, the Senior Biotechnology Specialist for USAID. Monsanto wanted USAID to help develop a GM crop for Africa that would give GMOs a good name. Cohen, who had come to the agency from the US seed industry, turned to USAID's most trusted research institute in Africa—the Kenyan Agricultural Research Institute (KARI). The three men set up a meeting with KARI and began to put their plan into action.

They decided to work on sweet potato, a crop neglected by seed companies and scientists but for which there were some promising GM applications being developed in the US. KARI had the perfect person for Monsanto to collaborate with - Florence Wambugu, a KARI scientist who had just completed a PhD programme at a UK University on sweet potatoes. Wambugu was immediately hired by Monsanto and spent the next few years at corporate headquarters in St. Louis, Missouri where the research and development for a sweet potato genetically engineered to resist the Sweet Potato Feathery Mottle Virus was carried out.

Fourteen years later, it is pretty clear that Wambugu's sweet potatoes will never make it into the fields of Kenya's farmers. She's stepped away from the project, as has USAID, and the research appears to be going nowhere; in recent field studies the GM crop failed to resist the virus and underperformed the non-GM local varieties. But getting the GM sweet potato out to farmers wasn't the real intention anyway. The overriding

goal was to open doors to GM, and in this it was a great success.

The work on GM potatoes ushered in a framework for the introduction of GM crops and brought KARI and its scientists well down the GM path. Wambugu dismissed reports of the failure of the GM sweet potatoes, saying the project "enabled the country to define its nature of support to the GM technology." She said, "Kenyan scientists have been at the forefront of advocating for a Kenya-specific policy". Wambugu certainly has, but no longer as a scientist. She's abandoned her research pursuits to work full-time on public relations with her firm, Africa Harvest Biotech Foundation, as an African spokesperson for the GM lobby.

There were multiple advantages to working with a specific GM crop like sweet potato. It opened up a long-term, direct collaboration between Monsanto and a Southern public research centre, in this case KARI, in which several KARI scientists would be trained at Monsanto's US headquarters. These scientists would end up forming a vocal domestic lobby with a personal stake in the GM debate. It was also an obvious source of public relations for Monsanto and other GM corporations. Here was a company "donating" its technology to African scientists in order to improve a subsistence crop in which it clearly had no financial interest. USAID couldn't put its money behind Monsanto's more lucrative GM crops anyway, since US law prevents the Agency from supporting any research into crops that compete with US agricultural exports.

But, most importantly, the project served as a vehicle for driving forward a regulatory framework conducive to GM crops. Before you can commercialise GM sweet potatoes, you have to field-test them, and for this you need regulations, or so the argument goes. The project thereby provides a way to side-step the larger question of whether there should be any introductions of GM crops and the critical questions about the merits and risks of the GM crop in question to proceed to the technical matter of how to "manage risk" in field tests. Who cares if the GM sweet potatoes actually work; what matters is that Kenya and other countries become places where Monsanto can sell its GM seeds and have its patents enforced. So, with the GM sweet potato project fading into oblivion, Monsanto now has the green light to start field trials of its Bt cotton in Kenya. KARI is also now working with the Donald Danforth Plant Science Centre to field test imported transgenic cassava.



Egypt - the Trojan Bt Potato

Egypt was the main target of ABSP's work in the 1990s, a result of generous funding for agbiotechnology from the USAID/Cairo office, to the tune of US\$7 million. Its most significant project in the country was the Bt potato project, which used a model that would be repeated again and again in other places. The project brought together a US based university (Michigan State University - MSU), a US seed company (Garst Seeds - now owned by Syngenta), and an Egyptian research centre - the Agricultural Genetic Engineering Research Institute (AGERI). The aim was to genetically modify popular Egyptian potato varieties with Garst's patented Bt gene and release them to Egyptian farmers. The potatoes were transformed in the US and the first three years of field trials were carried out at MSU. In the meantime, ABSP set to work on other matters.

Egyptian scientists were flown to an ABSP biosafety workshop in Jamaica and then to the US for an 8-week internship where they spent time touring the US agencies responsible for biosafety policy and the offices and labs of Monsanto and Syngenta. The pay-off was immediate. According to one ABSP official: *"One of these scientists assisted in drafting Egypt's biosafety regulations and went on to become the first biosafety officer at AGERI. Egypt adopted biosafety guidelines in January 1995 and by Ministerial decree the Egyptian National Biosafety Committee was established in 1995. To date, several biosafety officers at AGERI, the primary institutions charged with biosafety in Egypt, have continued to receive training by ABSP"*.

In 1997, after the construction of a greenhouse at AGERI, supervised and financed by ABSP, MSU sent over a batch of its GM potatoes and AGERI began field-tests. AGERI would continue field tests for another 6 years until the project was shelved, having come up against what should have been a foreseeable barrier: AGERI did not have anywhere near the resources to bring the potatoes through the regulatory system.

Although Bt potatoes may never be grown in Egypt, the GM crop with the best chance of making-it to Egyptian farms is Monsanto's Bt cotton, and, if it does, Monsanto will have ABSP to thank.

Uganda - succumbing to US[tr]AID

Uganda was one of the most important African countries pushing for a strong Biosafety Protocol. At the WTO Ministerial Conference in Seattle in

1999, it helped defeat a US and Canadian effort to pre-empt the Protocol through the creation of a 'Working Party on Biotechnology'. In November 2001, it became one of the first countries to ratify the Protocol and it is one of eight countries currently participating in the UNEP/GEF Project on the Implementation of National Biosafety Frameworks that began in December 2002. This active international presence on GMO issues and the imminent establishment of a national biosafety framework, combined with USAID's established presence in the country, makes Uganda an important target for the US agricultural biotech push.

The main US strategy for influencing Ugandan GM policy is to flood the country with money and expert advice. USAID is the main purveyor of both. It has put forward at least US\$200,000 for a Rockefeller Foundation-supported biotechnology lab for bananas, which USAID describes as a "high-visibility" project popular with Ugandan scientists. It's also recently started funding the National Biosafety Committee Secretariat at the Uganda National Council for Science and Technology (UNCST) - the country's major decision-making body on GM policy. While the Council was once a blockage point for the entry of GM crops, refusing to authorise Monsanto's application for field tests of Bt cotton, USAID feels that it now has a "leadership that has an aggressive agenda for implementing biotechnology in the country" and the agency expects the UNCST *"to approve field-testing [of Bt cotton] in the near future"*.

One of USAID's most trusted tools for *"implementing policy change"* is the workshop and there's been a slew of USAID supported workshops on GMOs and biosafety in Uganda in recent years. The main conduit for the workshops is USAID's local contractor Chemonics, which manages the Agency's Agricultural Productivity Enhancement Program (APEP).

In 2003, Ugandan authorities produced a first set of draft national biosafety regulations that drew heavily from the African Model Law - a clear setback for GM proponents. USAID's team was immediately on the scene to redress the situation. PBS and GM industry people, such as Pat Traynor of IFPRI, Thomas Carrato of Monsanto and Greg Jaffe of the Center for Science in the Public Interest, came in, some through the UNEP/GEF process, as *"international experts"* to comment on the draft and make recommendations. Their efforts were backed by high-level diplomatic actions. President Bush brought up GM crops during his visit with



President Museveni in 2003, as did the US State Department's Special Negotiator for Biotechnology. The Minister of Agriculture, Kisamba Mugerwa was flown to Sacramento in 2003 for the USDA/USAID Ministerial conference on biotechnology. Soon after, Mugerwa left the ministry for a directorship with IFPRI - the lead institute of the PBS program.

According to Mariam Mayet of the African Centre for Biosafety, at an October 2003 national workshop convened to consider the draft regulations and the comments received by the "international experts", the draft was "completely torn apart" and responsibility for a new draft was put in the hands of ACODE - an NGO connected to USAID and Rockefeller Foundation programmes. Shortly thereafter, the Uganda National Council for Sciences and Technology announced the completion of a new draft biotechnology regulatory framework. This time, as Mayet points out, "*most of the previous drafting based on the African Model Law appears to have been lost*". It now looks like PBS could reach its objective to have field trials of Monsanto's Bt cotton underway in Uganda in 2005.

Grassroots resistance

We have shown only a few examples of the pressure and finances coming from the US, and shown only a fragment of what has become a complex web of organisations and individuals involved in the promotion of GM crops. It's not easy for poor countries to resist this pressure from the world's

superpower. Few governments have the stomach to stand up directly to the US and those that do are always at risk of caving in under the constant pressure. At the grassroots, however, once people understand what is happening and what's at stake, there is a much greater will to resist. In Mali, for example, one of the world's poorest countries, the US has put a significant amount of money on the table, which the country risks jeopardising if it does not open the door to GM crops. It's also made it more or less clear that if Mali wants the US to act on its subsidies to its cotton producers, it better think carefully about its upcoming decisions on field-tests for Bt cotton. Yet, even as scientists and policy-makers take the bait, there is a rising-tide of Malian farmers calling on their political leaders to stand firm against US pressure and to reject GMOs.

Ultimately, Governments end up going against the desires of their populations in order to appease the US, or worse, to get their share of the crumbs that the US hands out. In this corrupt game of give-and-take among elites, the livelihoods of millions of farmers are at stake. But so too is the very system that assures US global dominance. For growing numbers of people around the world, the biotech industry's aggressive push of GM crops and their government's acquiescence, strain the limits of what can be tolerated. In its haste to force-feed the world with its GM crops, the US government may be seriously miscalculating the explosive force of the social movements that its policies are helping to unleash.

This article is a modified extract from the fully referenced GRAIN briefing, "USAID: Making countries hungry for GM crops", available on the GRAIN website at <http://grain.org/go/usaaid>. The briefing provides many more details about USAID's work around the world, including some examples of its practices in Asia.



Sprouting Up...

Push for GM papaya continues in Thailand and Sout-East Asia

A new programme for biosafety might usher further contamination

GRAIN & BIOTHAI

In July 2004, Greenpeace accused the Thai government of illegally distributing GM papaya seeds after it found out that a local farmer's plantation in Khon Kaen province was contaminated with GM papaya. It was reported that 2,600 farmers had bought papaya seedlings from the Department of Agriculture's (DoA) research station where field trials of GM papaya were being conducted. The papaya is genetically engineered for ring-spot virus resistance and therefore known as PRSV papaya. At first the government denied that GM crops were being grown in Thailand, having a ban on GM crop field trials since 2001. In August 2004, the Thai Prime Minister Thaksin Sinawatra reversed this ban allowing the entry of GM crops in Thailand. This however was met by immediate public opposition from the general public, farmers' groups, NGOs, Bhuddist communities and the Thai organic business groups. Within 10 days, Sinawatra had to retract his decision and called for a creation of a national panel of academics to look into the matter. This came after the Commission on Human Rights ran its own test and confirmed GM contamination of papaya crops. What was supposedly a 'contained' field trial in the DoA's Khon Kaen research station turned out to be an open field, the only barrier to other papaya plantations being banana trees and a barbed-wire fence. Contamination was widespread even reaching another nearby province, Ubol Ratchatani.

Eventually Sinawatra himself ordered the DoA chief to do a clean-up operation, which included removing all GM papaya trees in affected plantations. At the same time, an investigation committee was set up to determine whether the GM seeds were smuggled out of the station or had been simply the result of cross pollination. Current law in Thailand forbids the sale of GM seeds. So far the committee has found that at least 90 farms which received seedlings of papaya from DoA are contaminated. And although the committee has yet to officially conclude on the cause of contamination, evidence points to human errors by those working on the GM papaya project.

The development of PRSV papaya in Thailand started in 1996 when genes from unique Thai strains of ringspot virus were taken to Cornell University and inserted into papaya cells. The papaya seeds were then taken back to Thailand to be grown and field tested, without public knowledge, in the DoA's research station in Khon Kaen.

Over the course of this process, several patent claims over papaya on wide range of aspects have been applied for by Monsanto, Seminis and Cornell University in the US Patent and Trademark Office (USPTO). Just recently USPTO granted a new patent on GM papaya assigned to Cornell Research Foundation covering a broad range of DNA constructs and methods used to create ringspot virus resistance in any kind of GM papaya. This makes Thailand's GM *Khaek Dam* and *Khaek Nual* papaya varieties, technically a property of Cornell even if its development is done in Thailand and by Thai agencies.

Thailand is a member of the Papaya Biotechnology Regional Network of Southeast Asia (PBRNSA) organised by the International Service for the Acquisition of Agri-biotech Applications (ISAAA), and also includes Malaysia, Philippines, Vietnam and Indonesia. The network receives technical and financial assistance from Monsanto and Syngenta, which also fund field trials. Under this network, countries negotiate individually with the private sector in using the licensed technologies. These rights are limited to research use and the license needs to be re-negotiated if a country decides to commercialise GM papaya.¹ In Thailand's case, the drafted terms of agreement between Cornell University and DoA specifically states that the fee could rise to 30% of the selling price if the value of exported papaya reach 1 million Baht (US\$ 25,000).

That is if Thailand would be able to export at all. Since the papaya scandal, Thailand started losing its papaya markets. Several European Union importers stopped importing canned fruit products containing Thai papaya.

The main problem is contamination. Whether this contamination was an honest mistake or a cynical and deliberate attempt to contaminate Thailand's production of papaya, further contamination from field trials is all too likely. In Thailand, it has been shown that it is impossible to contain GM papaya field trials. Yet there are those who are pushing to reduce the regulations on field trials, to streamline and simplify the process of field-testing and approving GM crops. Foremost behind this push is USAID and their Programme on Biosafety Systems (PBS)². The argument goes that this would unburden national research institutions from an expensive and time-wasting regulatory approval. At the heart of their argument is the assumption that field trials are contained, which of course is flawed. Yet USAID, with the backing of the US government, is a powerful body and national governments find it difficult to resist the constant pressure.

Meanwhile in the Philippines, field testing of GM papaya is expected to commence by the end of 2005, pending approval by the National Committee on Biosafety of the Philippines (NCBP). The NCBP is the same body that cleared Bt maize for commercialisation in 2002 despite nationwide protests.

1- Michelle Lujben and Joel I. Cohen, *Developing countries forge ahead in crop biotechnology for the poor*, <http://www.isnar.cgiar.org/ibs/NextHarvest.htm>

2 - See the article on page 28 or see <http://grain.org/go/usaaid>



The concept of “environmental services” has become popular over the last decade and has crept insidiously into our collective consciousness without setting off the alarm bells it should have done. Environmental services provide the means of taking privatisation to a new level – a means of privatising many things that have as-yet been unavailable for privatisation: air, water and all sorts of other ecological processes. What has been undertaken so far in the name of environmental services, and what are the implications of turning such basic elements into commodities?

No, air, don't sell yourself ...

GRAIN



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*I don't know who you are, but
one thing do I ask of you,
don't sell yourself.*

*No, Air,
Don't sell yourself,
Don't let them channel you,
Don't let them run you through tubes,
Don't let them box you
Nor compress you,
Don't let them make you into pills,
Don't let them bottle you,
Take care! ...*

Pablo Neruda, “Ode to the Air”

Some 50 years ago, the Chilean poet, Pablo Neruda, wrote these lines in his “Ode to the Air”.

At that time, everyone took these ideas as metaphor: another example of the poet's imagination and genius. Today, in 2005, those fears imagined by Neruda have a real foundation that grows daily. The air surrounds us, allows us to breathe, messes our hair and flows freely. But along with water, the weather, the oceans and the rain, the air has become viewed as an “environmental service”, another class of merchandise available for market transactions and for which all of us must pay, like it or not.

The concept of “environmental services” has become popular over the last decade. Originally coined by economists the term now appears



frequently in documents produced by governments, the World Bank and other international bodies, universities and business associations. It has also been adopted in the vocabularies of development agencies, NGOs and social organisations. Terminology and legal definitions surrounding the concepts of paying for environmental services and charging for them are still in a formative process (see box for one definition). Nevertheless, environmental services have crept insidiously into our collective consciousness without setting off the alarm bells they should have done, and have largely been accepted as obvious and unquestionable.

The idea of making payments for environmental services arose and has been strengthened as a result of specific visions and objectives. Its appeal and acceptance lies in the way the concept harmonises perfectly with the social and political context that we are living in. Understanding its roots may help us to deal with the impact environmental services could have on society, particularly in helping us to understand why there is nothing obvious or unquestionable in the concept.

The current situation

Latin American nations have been the pioneers in environmental services, particularly Costa Rica, but also Mexico, Ecuador and Brazil. Beyond Latin America, Australia and the Philippines are the front-runners. The fields in which the greatest practical implementation has been made are the sequestration of atmospheric carbon, the capture and storage of water, and biodiversity, and landscape conservation (primarily for tourism).

The process of establishing a scheme for the sale of an environmental service usually begins with a conservation project, an ecotourism venture or a local community water bottling enterprise. Attached to this is an emphasis on sustainable development. Most of the projects have government backing, although it is already commonplace to see initiatives started by the private sector and presented as NGO efforts.

In conservation projects, the local communities are offered annual payments for conserving given areas of forest or natural vegetation. In exchange the communities must implement a management plan defined by the government or a private agency. The community must stick to this management plan throughout the lifetime of the project; they may not use the forest or natural areas in any other way. Such management plans aim to have a “zero impact” on the environment, which means that

Ecosystem Services (or Environmental Services)

Supply: Goods produced or provided by ecosystems such as food, water, fuel, fibre, biodiversity or natural medicines.

Regulation, or control: Services obtained by regulating or controlling ecosystem processes, such as the quality of the air, the climate, water (distribution and quality), erosion, the causes of illness, the manipulation of biological processes, risk reduction and so on.

Cultural aspects: The non-material benefits that enrich the quality of life such as cultural diversity, religious or spiritual values, knowledge (traditional or formal), inspiration, aesthetic values, social relations, a feeling of place, the values of a group’s cultural patrimony, recreation and ecotourism.

Back-up, or supporting activities: The services required to produce the other services, including primary production, the formation and/or fixture of soil, oxygen production, pollination, habitat creation, nutrient recycling and so on.

Source: An Ecosystemic Evaluation of the Millenium (2002), quoted in Prisma: Compensation for Environmental Services and Rural Communities. Lessons from the Americas and critical issues for the strengthening of community strategies. El Salvador: Research Program for Development and Environment, 2003.
http://www.prisma.org.sv/pubs/CES_RC_Es.pdf

nothing may be removed or interfered with.

Ecotourism projects are also tied in a similar way to management plans. Furthermore, communities involved in these ecotourism projects must also invest in infrastructure and marketing, usually resulting in loans and debt.

With water-related projects, the state “recognises” the right of the communities to “sustainably” exploit a marginal portion of the water “produced by” the local source, usually for bottling, and once again in accordance with the terms of a management plan. Again, communities involved in water-related projects must also invest in infrastructure and marketing.

There are three immediate impacts on the communities involved in such conservation projects: loss of control over at least part of their territory; indebtedness, which can lead to the loss of land; and punitive financial and legal measures if they do not fulfil what is stipulated by the management plans. The potential for expropriation, marginalisation, repression, exploitation and the internal division of communities is incalculable. Such an impact on communities is shown by recent legislation in Chile (see *Box: Fishing out Chile’s fisherfolk*)

Another way of establishing an environmental service is by privatising a national park. The national park is given over to a private enterprise,

Fishing out Chile's fisherfolk

The Law of Fisheries and Aquaculture of Chile¹ is one of the most aggressive pieces of legislation supporting the privatisation of natural resources in the world. Although it does not mention environmental services, it follows exactly the same principles and uses similar language. In the name of conservation, the law created transferable catchment quotas and management areas to be allocated by the government.

Local fishing communities (many of them indigenous peoples) were granted a reduced exclusive area of five miles along the coasts of Chile to fish in. Artisan fishing has been expelled from the oceans outside the five mile limit, which have been granted exclusively to industrial fishing, much of it in the hands of transnational companies. But industrial fishing is not banned from the "exclusive" 5-mile strip; catchment quotas can be allocated to industrial fishing companies if artisanal fishing organisations do not claim or use them. Right from the start, the law enabled fishing corporations to control 80% of fishing resources; a figure that can easily increase as big companies claim access to the areas that artisan fishers are not using. The environmental regulations imposed on big companies are lower than those imposed on artisanal fishing, and overexploitation by industrial vessels is affecting all areas. A strict policing system has been set up, and artisanal fisherfolk can be sent to jail if they catch more than their quotas. Chilean fisherfolk organisations are demanding that coastal areas be declared disaster zones due to the extremely low fish numbers.

Coastal areas are not exclusive to fisherfolk either. Industry can claim big areas for aquaculture. In order to access to the coastal area, artisan fisherfolk must organise themselves according to governmental rules, request permission from the government, comply with a management plan sanctioned by the government and pay an annual licence that exceeds US\$15 per hectare, theoretically to be used for conservation activities.

In practice, the catchment quotas and management plans have imposed serious limitations to artisanal fishing, both in area and in quantity of fish caught. That, and overexploitation by industrial vessels have created a major crisis. Fisherfolk organisations have indicated that they can no longer make a living out of fishing.² Even worse, the organisational structures imposed by the government have disrupted the traditional organisation among indigenous fisherfolk and in practice have taken away their rights.³

1 - <http://www.subpesca.cl/pagina%20juridica/page2.html>

2 - See <http://www.diariopyme.cl/newtenberg/1639/article-62265.html>, http://www.cedepesca.org.ar/noticias/131204/crisis_de_la_merluza_en_chile.htm
http://www.cedepesca.org.ar/noticias/011204/barcazo_bahia_lirquen.htm

3 - The *lafkenche* are the indigenous fisherfolk that inhabit over 500 kilometer of coastline in southern Chile. They have actively fought the Chilean law of fisheries, indicating that "the law has left indigenous peoples without access to marine resources because their traditional and historical organizations will not be allowed to register to exploit the wealth of the sea" <http://www.mapuexpress.net/?act=publications&id=82>

or more commonly a specially created conservation NGO or foundation. These organisations or enterprises are granted the concession to administer the natural areas for lengthy periods of time in exchange for the promise to conserve them, and with the freedom to profit from their resources (see *Box: Broken hearts in Bolivia*). Often, indigenous and rural communities loose in the process, as they do not have access to the park area any longer, or their own land is declared "buffer area", thus limiting their use of the territory.

Carbon seekers

But those who have invested or have become brokers in environmental services - governments, private enterprises or NGOs - have potentially very good deals in their hands. Privatised parks or conserved areas can generate significant income through so called 'carbon credits' from bioprospecting contracts, from the conservation and storage of water which is handed under concession agreements to private enterprises¹, and from ecotourism.

Carbon sequestration (capture) and trading is

currently the most common and well-known form of environmental service. The biggest polluters of CO₂ into the atmosphere is industry (especially manufacturing and power industries). Because of different regulations and agreements, industry must reduce emissions. For any company in the United States the cost of reducing emissions at the source may be up to US\$150 per tonne of carbon; a company in Europe may need to invest up to US\$200 for the same reduction. But companies have a different alternative: instead of actually reducing their emissions, they can pay other companies and groups, mostly from non-industrialised countries, to reduce emissions or to absorb CO₂ from the atmosphere, and account that as their own reductions. The big profit for companies is that when paying others, they pay only a fraction of what they would need to invest at home to achieve the same goal. The business of buying and selling these carbon credits has become so big, that 'carbon bonds' are sold in the stock market. Companies or groups from non-industrialised countries currently sell the reduction of carbon emissions or the absorption of atmospheric carbon at around US\$10 per tonne

1 - See as an example the case of PROCUENCAS at www.fao.org/Regional/LAmerica/foro/psa/



Box: Broken hearts in Bolivia

Noel Kempff Park¹ is one of the largest natural parks in Bolivia and contains a great wealth of biodiversity. It is located in the northeast of the Department of Santa Cruz, on the border with Brazil. In 1995 a concession for its operation was granted to a Foundation known as Friends of Bolivian Nature (FAN-Bolivia). In 1996, thanks to a contribution of nearly US\$10 million from British Petroleum, American Electric Power (the largest electrical utility in the US), PacifiCorp and The Nature Conservancy, the park was extended by more than 600,000 hectares, and now covers nearly 1.5 million hectares (about 5,800 square miles).

In exchange for their contributions, the enterprises received 51% of the carbon emissions units offset by the biological processes of the ecosystem, meaning nearly 14 million metric tonnes in 10 years. After the money invested in expanding the park this is equivalent to less than one dollar per tonne. The costs of emissions mitigation in the US is more than US\$150 per tonne and more than US\$200 in Europe. The American Power Company reported that its investments in ecosystems conservation allow it to mitigate the effects of carbon emissions at less than a tenth of the costs of alternative measures.

Furthermore, there are consequently many other sources of funds available to FAN-Bolivia (though significantly smaller). These are eco-tourism, bioprospecting, and the in vitro reproduction of species found in the park. Some of the proceeds are used for conservation projects in areas that neighbour the park. One of the main projects involves 45,000 hectares where various indigenous peoples already live and who are now obliged to submit to a management plan designed with The Nature Conservancy. This main objective is to produce and sell palmitos (palm hearts), though problems have already been reported in both production and sales.²

FAN documents identify these projects as part of an effort to reduce the conditions for potential conflicts. But several federations and confederations of Bolivian farmers and indigenous peoples have issued strong statements indicating FAN and other organisations (including WWF) "are provoking confrontations between farmers, indigenous peoples and settlers"³

1 - For more information visit: <http://www.ecoportal.net/content/view/full/21543>, <http://www.fan-bo.org/pnoelk.html> & <http://www.aep.com/environmental/performance/emissionsassessment/default.htm>

2 - See <http://www.fan-bo.org/comunidades.html>

3 - See the declaration of the "First National Meeting of Communities from Protected Areas" at <http://bolivia.indymedia.org/es/2003/06/1792.shtml>

of carbon, and US and EU companies thus save over 90% of what it would cost them at home. In the case of Bolivia shown in the box, the investors had a particularly good deal as they acquired these credits at only one US dollar per tonne. And they are free to account them as their own reduction of carbon emissions, or to sell them to other companies.

Assuming authority

One of the most serious concerns about these new approaches to natural resource management is the way in which governments assume the authority to grant or recognise the rights of local communities over territories that belong to them or have been under their control historically. As a result governments are empowered to take away such rights if certain conditions are not fulfilled, or to turn their rights and land to a third party including private enterprises and international NGOs. Governments also assume the right to privatise great tracts of land, much of which was taken in the first place from indigenous peoples and may be a part of the public or national heritage. The privatisation of nature, including indigenous peoples' and small farmers' land, has increased to such high levels never seen before. And environmental services are offering

a new mechanism to privatise, expropriate and concentrate the ownership of land.

An historical perspective

Why have environmental services appeared today with such force? If privatisation is the goal, why not merely promote more forcefully existing mechanisms to privatise the land and water in the hands of native peoples and campesinos? History offers some insight. The second half of the 1970s and the 1980s were times of worldwide economic crises and instability. Signals went up around the planet pointing to an end to the era of promising every last person a share in the welfare generated by capitalism. Capital profits could not continue to grow endlessly if existing social and labour standards and rights were respected; that entailed costs that capital was not willing to pay

The solution found by capitalist philosophers is what we call "neo-liberalism"² today. Since the existing rules did not permit the continued growth of profits, the rules needed to be changed. To this end, a number of new measures were introduced, first by a few governments and then globally through multilateral organisms such as WTO and WB, including:

2 - The basis of this ideology was initially developed in the School of Economics of the University of Chicago, under the leadership of Milton Friedman. Its first practical application took place in Chile under Pinochet, and was later implemented by the governments of Margaret Thatcher and Ronald Reagan. Starting 1992, it was imposed worldwide through WTO. It is called "neo-liberalism" because it seeks to restate a new ("neo") form of the old philosophy of Adam Smith, which is total freedom ("liberalism") for capitalists to increase capital control and profits (<http://grain.org/jargon/?id=80>).



- a) Increasing the levels of worker and employee exploitation;
- b) Granting *carte blanche* to capital, especially to large capital, so it can seek the most effective ways of getting the greatest returns from its investments; and
- c) Obliging people all over the planet to consume more.

Those of us who depend exclusively upon our own labour to earn a living have suffered the effects of the first two processes. We are seeing net wages and salaries are decreasing despite an ever increasing level of productivity; growing and permanent unemployment; labour insecurity and the loss of labour and social rights; massive bankruptcies in agriculture and the steady disappearance of campesino and native peoples' farming systems; bankruptcy of small- and medium-sized enterprises; systematic aggression against social organisations; concentrations of corporate power that would have violated the law only 20 years ago; monopolies in almost all sectors of the economy, including in those activities that we depend upon directly for survival; and so on and so forth. But it is the final process, the obligatory involvement of people in the cycles of consumption that has, perhaps, most deeply affected our lives.

Obligatory consumption has taken two main paths. On the one hand, there is the obliged indebtedness of nations that, among other things, has submerged all of the non-industrialised world in a permanent state of foreign debt and, on the other hand, there is the consumption of "services". Until well into the 1980s, national governments were among the primary suppliers of what today we call "services". Then there was an orchestrated attack against the public sector and the dogmatic imposition of privatisation, with the excuse that it guaranteed welfare, efficiency and quality. But privatisation is nothing more than the obligation to pay a private company for something that previously was not charged for or what was paid for by the general population, theoretically at least according to an 'ability to pay' basis. A wave of privatisation began - and continues to spread - all over the world, involving education, housing, drinking water, electricity, transportation, communications, health and pension funds. For the latter two alone, a country's population must deliver 15-30% of their income to the private sector. Looking back, there is no doubt that beginning in the 1980s the profits of big business and the transnational companies have grown enormously, even when the economy in general, and salaries in particular, have remained stable or decreased.

For capitalists, that has not been enough. Having opened the floodgates of privatisation, the objective has become "full coverage". What is sought today is the full privatisation of the planet.

Intellectual property as the first general test

The rise of biotechnology confirmed that the living resources of the planet are an unending source of wealth and welfare. Until then, a large proportion of that wealth was available to the peoples of the world, without any need for market intervention. From an industry point of view, this situation had to be corrected, and one of its first tools to do this was intellectual property.

When negotiations began in 1986 on the General Agreement on Tariffs and Trade, which finally led to the creation of the WTO, few would have predicted that one of the demands pursued most fervently by the US government would concern intellectual property. Its slogan was "without exceptions", meaning that intellectual property should not apply simply to industrial inventions and intellectual works but also to living things and knowledge, particularly but not exclusively through the granting of patents. The negotiators demanded a legal framework that would allow for the ownership of seeds, plants, animals, micro-organisms, genes and technical and scientific information.

The US position seemed absurd to most governments at that time. India, Mexico, Malaysia, Brazil, Ethiopia and the Scandinavian countries were actively and vehemently opposed, and were supported with the tacit approval of many others. But nearly 20 years later, using economical and political pressure and threats, the US has managed to fully impose its position, and has even improved on it.

Environmental services as the final assault

Intellectual property rights have moved the privatisation agenda forward in leaps and bounds, but under the WTO, they do not permit the privatisation of everything - not even of all living things. To claim something as property under the new rules of intellectual property it is necessary to at least recognise and describe a plant, an animal, an organism or a gene. What about all the living elements that are as yet unknown or whose functions are not explicitly known? What about oil, minerals, water, air, oxygen, rain, or the capacity of dead organisms to decompose and purify the air and regulate the climate? It was not





possible to privatise them by claiming intellectual property rights; it was necessary to seek another solution.

The justification was developed slowly, but effectively. The privatisation of mineral and oil deposits was justified as part of a bigger attack on the public sector for being inefficient and inadequate. Then an attack was mounted against not only the state but everything that was public and collective. By using supposed environmental justification, it was stated again and again that the only thing that human beings take care of is their own property and that therefore the only way that the environment would be cared for would be for it to belong to someone. The 1980s and 1990s witnessed many efforts from sociologists and psychologists to provide a scientific foundation to those claims.

In 1993, the World Bank forcefully launched a new concept – natural capital – to support this new approach:

*“The capital of an economy is its stock of real goods, with the power to produce further goods (or utilities) in the future. This definition of capital would probably be acceptable to most economists. Viewed as such, capital would comprise land, which in classical economic thinking is considered a separate factor of production, for land would qualify as part of the stock of real goods, capable of producing further goods. It is but a short step to extend this definition to nature, both as a source of raw materials and as a receptor of wastes generated in the course of economic activity.”*³

Only ten years later, the definition of natural capital is more fully developed and blunter:

*“Natural capital includes all the familiar resources used by humankind: water, minerals, oil, trees, fish, soil, air, etc. But it also encompasses living systems, which include grasslands, savannas, wetlands, estuaries, oceans, coral reefs, riparian corridors, tundra, and rainforests.”*⁴

In other words, we do not live on the earth but rather on a sphere comprised of “natural capital”. The new concept is central from the point of view of progress in capitalism, but, given its vague and broad definition, it could include almost anything. It suffices to be an element of nature that produces “new goods”. Thus the sun is natural capital; it is the energy released by it that allows all of the production of new goods on earth. Secondly, and unlike concepts such as “natural resources”, “nature”, “public property”, and “reserves”, there is

no doubt that capital is by definition a piece of private property and transferable, something that can be bought and sold to the highest bidder. And thirdly, all capital is also by definition available for exploitation, and thus we have gained a fundamental key to allowing the privatisation of the world.

In 1997 a key concept was developed with regard to the privatisation of natural areas and ecosystems in general, and published in *Nature* magazine⁵ and in the book *Nature's Services*.⁶ The terms used originally were “ecosystem services” or “natural services”, but the term that has become popular is “environmental services”.

The new term is defined even more broadly and vaguely than “natural capital” and thereby covers everything imaginable. For example, “atmospheric regulation” is the ability to keep air quality at breathable levels, and is considered today to be an environmental service. Therefore, each time we take a breath we must remember that we are not simply breathing, but we are “receiving a service” – and we are talking about something so basic that it has never been considered necessary to define it as a fundamental right that should merit respect. The same occurs when it rains, when we are not affected by flooding, when we contemplate the landscape, enjoy the sunlight or the shade, or whenever we do anything related to nature. That means that every moment of our lives we are receiving an “environmental service”. And as those who promote these concepts tell us, we are talking about life support processes.

The concept of “environmental service” is inherently bound to that of “natural capital” and nothing to do with caring for nature and life. Rather, the concept is about privatisation and exploitation and, above all, making payments to those who have claimed property rights over that “capital”. And payment is obligatory because we might deny ourselves the purchase of a television or a hamburger, but we cannot deny ourselves the act of breathing.

The importance of the word “services”

“Services” is a vague economic term with broad applications, and includes goods and processes that are not strictly productive, but which are a working part of the economy: highways, communications, banking, advertising, and so on. In practice, it has been sufficient to call something a service for it to be considered such from an economic and legal point of view. The reason why we talk

3 - Salah El Serafy, In Toward Improved Accounting for the Environment, a symposium organised by UNSTAT and the World Bank. World Bank Report 11989, 1993.

4 - Paul Hawken, Amory Lovins and Hunter Lovins, *Natural Capitalism: Creating the next industrial revolution*. Rocky Mountain Institute, 2003. www.natcap.org

5 - Robert Costanza et al, “The value of the planet's ecosystem services and natural capital”, *Nature* Vol. 387, p 253-260.

6 - Gretchen Daily, ed, *Nature's Services: Societal dependence on natural ecosystems*, Island Press, 1997.

about “environmental services” today, rather than “environmental processes” or “environmental functions” is because the concept of services fits perfectly with the possibilities for maximising the earnings generated by obligatory consumption:

a) Unlike a product that we buy and pay for just once, a service must be paid for each time it is used. Once again, as Hawken states: “An economy based on a service-and-flow model could also help stabilise the business cycle, because customers would be purchasing flows of services, which they need continuously, rather than durable equipment that’s affordable only in good years”.⁷ How long can you hold your breath?

b) Environmental services have a captive market that is constant, endless and free of capital depreciation.

c) The concept allows the claim to ownership of not only tremendous components of the planet Earth, but also of intangible elements such as the regulatory capability of ecosystems.

d) Because they are intangible, services can be consolidated or broken down into separate parts freely and according to the criteria of the seller. For example, a business could sell “weather control”, but it would be much more profitable to sell individual packages of “the right amount of rain”, “equable temperatures”, “the absence of floods”, “the absence of extreme temperatures”, “freedom from drought”, “perfect summers”, “beautiful springtimes”, “the absence of storms”, “tolerable winds”, and so on. The creation of new “services is limited only by the entrepreneurial imagination.

The importance of the context

The most natural reaction to all of this is that it is absurd. And it is. Deeply so. But that has not stopped a legal and institutional framework being built around environmental services. Key implementing tools are the WTO agreements, and particularly the latest generation of so-called ‘free trade’ agreements being peddled by the US, the European Union and Australia. These fail to define what a ‘service’ is, so anything imaginable could be permitted. Here lie the foundations for claims to ownership of vast territories belonging to native

communities, for submitting all of humankind to the processes of obligatory consumption, and for guaranteeing profits with full protection to transnational corporations.

Such documents and agreements are just the tip of the iceberg. Ideological arguments continue to present all sorts of justifications to support these measures, veiling their impact and introducing changes gradually so as to neutralise the normal reactions of rejection. Governments are playing a central role here, as well as a number of influential NGOs that have committed considerable resources and effort to convince politicians, bureaucrats, local leaders and communities, of the convenience of selling environmental services. See the Box: Active in Environmental Services.

So what can we do?

One of the most urgent tasks is to take the veil off the economic objective and the ideological underpinnings of environmental services, and understand that there is absolutely no way of ‘compensating’ native communities for centuries of preserving the earth’s ecosystems. Equally important is to remind ourselves that, despite years of ideological efforts, the privatisation of the planet remains unacceptable to the great majority of human beings. Although we are confronting an economic model that is increasingly brutal and aggressive, brute force is not a sign of strength. In the last ten years, many people have become disillusioned by the neo-liberal argument. Social organisations are recovering and movements are building to establish autonomies, and to confront and disarm the strategies described above. These are signs that with hard work and determination, we can move towards a world in which, to quote other verses of Neruda’s same “Ode to the Air”:

*The day will come
When we free
The light and the water,
Earth, humankind,
And all for all
Will be like you are.*



Box: Active in Environmental Services.

There are quite a few well-known NGOs, institutions and intergovernmental organisations involved in environmental services and there are numerous projects and examples. Here we scratch the surface and show just a few of those who are especially active:

Worldwide Fund for Nature (WWF): As an example see, “The Water Fund Model. Motagua-Polochic System, Guatemala. A novel environmental Payment Scheme with the Private Sector” at www.wwfca.org/php/proyectos/agua/fondo02eng.php. WWF has also published a series of booklets and studies on Payment of Environmental Services (PES).

“The first step in promoting stewardship of natural resources is to assign natural resources and the services they provide their true value.....The next step is making environmental services more marketable.....Creating environmental markets is the third step in developing stewardship programs.”

In “*Paying for environmental stewardship: Using markets and common-pool property to reduce rural poverty while enhancing conservation*”, John D. Shilling and Jennifer Osha, Macroeconomics for Sustainable Development Program Office, World Wildlife Fund. *Technical Paper: Economic Change, Poverty and the Environment*. January 2003, From: www.panda.org/downloads/policy/shilling.pdf

Conservation International (CI): For example, CI-Brazil describes a partnership with various corporations, such as DuPont Brazil, and identifies PES as one of their activities - <http://conservation.org.br/programas/?id=98>.

World Conservation Union (IUCN): IUCN supports or is part of programmes such as RUPES (Rewarding the Upland Poor for Environmental Services) in Sri Lanka, Philippines, Thailand, Vietnam, Indonesia, India, China and Nepal. The following website provides many more details. <http://www.worldagroforestry.org/sea/Networks/RUPES/>.

Through the Water and Nature Initiative, (implemented in at least 15 countries) IUCN is also working with the government of Tanzania to design a payment for environmental services scheme. Full details available on their website: <http://www.waterandnature.org/news/05FebEcon.html>

The Nature Conservancy (TNC): The Nature Conservancy clearly identifies “*market incentives for conservation*”, and PES as part of their central strategies. The same web site indicates “*Examples of recent projects can be found in Chiapas, Mexico; Lago de Yojoa, Honduras; Quito, Ecuador, and Sierra de la Minas, Guatemala*”. TNC is also part of the PES initiative in the Noel Kempf National Park in Bolivia. For more details see: <http://nature.org/aboutus/howwework/conservationmethods/conservationfunding/>

International Institute for Environment and Development (IIED): IIED runs an “*Environmental Economics Programme*” (<http://www.iied.org/eep>), within which it runs a project named “*Markets for Environmental Services*”.

“The aim of this project is to promote the provision and maintenance of environmental services in ways that reduce poverty and improve livelihoods... IIED aims to develop and test a general framework for analysing the environmental and poverty impacts of market-based approaches to environmental protection.”

World Resources Institute (WRI): WRI have presented policy proposals to make the marketing of environmental services more efficient and attractive. The WRI has also been involved, amongst others, with the Millennium Ecological Assessment Initiative (MA). This initiative aims to assess environmental services at a global scale, and its marketing is one of the lines of actions to be explored as part of “strategic recommendations”. See <http://www.maweb.org/en/Products.EHWP.aspx#downloads>

World Bank: The World Bank has a strong policy of promoting PES around the world. A brief description of such activities by the Bank can be seen at <http://www.fao.org//wairdocs/lead/x6154e/x6154e07.htm>.

United Nations Food and Agriculture Organisation (FAO): FAO has published several documents regarding PES. In one of them, “*Payment Schemes for Environmental Services in Watersheds*” (see <http://www.fao.org/docrep/006/y5305b/y5305b01.htm>) it can be read as the first line of its summary: “*Payment schemes for environmental services (PES) are flexible, direct and promising compensation mechanisms*”, and later on: “*PES systems present a series of advantages and opportunities [emphasis by the authors] which make them a promising mechanism to improve the conditions of water resources in watersheds*”

Global Environmental Facility (GEF): is the main funding mechanism through which the World Bank implements its environmental policy.

Tropical Agriculture Research and Higher Learning Centre (CATIE): CATIE provides technical support to different projects that include PES. The institute has also created a “*Group on the Socioeconomy of Environmental Services*” dedicated to research and teaching on this topic. The group identifies PES as one important area of work. See <http://catie.notlong.com>

Others: Support also comes from various regional banks, foundations like Ford, Rockefeller and Summit, and business organisations like the Ford Motor Company, Coca Cola, and American Electric Power (see, for example, the list of almost 40 corporate partners of The Nature Conservancy at <http://nature.org/joinanddonate/corporatepartnerships/leadership/members.html>). Many other intergovernmental agencies are also involved such as the United Nations Environment Programme, and the United Nations Development Programme.

For all these and more links, visit <http://grain.org/go/env>



“ Relax - we’re from Conservation Inc.”

