

7

Food, Agriculture and Biodiversity

Food, agriculture and biodiversity, as IPR-related issues, are closely related. Apart from the TRIPS-related interrelationships, they are also the subject of three very important international agreements, described in chapter 2 whose coverage overlaps to a significant degree. These are the Convention for the Protection of New Varieties of Plants (UPOV Convention), the FAO International Treaty on Plant Genetic Resources for Food and Agriculture, and the Convention on Biological Diversity (CBD).

Food security and IPRs

An adequately nutritious diet is essential for all people throughout their lives. In addition, people need to earn a living. In many developing countries, the majority of the population lives on the land, cultivating food and other crops for both subsistence and exchange. One of the main issues raised by current debates on IPRs - particularly in the context of their impact on developing countries - is the consequences that legislation protecting such rights may have for food security. The term "food security" here applies to more than just ensuring that an adequate amount of food is cultivated or available through the market. It is also concerned with the question of whether people can afford to buy or cultivate enough food to satisfy their basic nutritional requirements. If this is not the case, as in most developing countries, one can argue that food security is lacking.

What is the connection with IPRs? In the developed world, plant breeders have generally sought IP protection for new plants - including new foodstuffs - through plant breeders' rights (PBRs). The point at issue is whether the international acceptance of common standards of PBRs through the UPOV Convention (see chapter 2 for the main features of the Convention, and box 2.4), initially developed to meet the conditions in the advanced industrialized countries, may have the effect of undermining the food security of communities in developing

countries. Some NGOs argue that this may occur in three ways:

1. by encouraging the cultivation of a narrow range of genetically-uniform crops, including non-food cash crops, with the possible consequences that people's diets will become nutritionally poorer and crops will be more vulnerable to outbreaks of devastating diseases;
2. by limiting the freedom of farmers to acquire seeds they wish to plant without payment to breeders, and thereby impoverishing them further; and
3. by restricting the free circulation of plant genetic resources, which is generally considered essential for the development of new plant varieties.

One important consequence of TRIPS is that all WTO member countries must provide IPR protection for plant varieties, either in the form of patents, or through a *sui generis* (i.e. of its own kind) system. In principle, the *sui generis* provision allows countries to develop their own system for protecting plants (see chapter 4, above). In practice, the UPOV Convention is likely to be the most widely used model, as it is the only existing system in international IPR law that offers protection to plant varieties. But concern has been raised that the UPOV Convention was drawn up mainly by European countries, and is designed to accommodate the specific

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characteristics of the capital-intensive, large-scale commercial agricultural systems that generally prevail there. As a result, it is often argued, the system is unsuitable for most developing countries.¹ Critics have expressed concern that the current system of IPR protection for plants could have an

adverse impact on food security in terms of: (i) PBRs and research priorities; (ii) the interests of poor farmers; (iii) the availability of genetic resources for further breeding; and (iv) genetic erosion. These concerns are discussed below.

Plant breeders' rights and research priorities

Many resource-poor farmers cultivate minor food crops that enable them to meet the nutritional needs of rural communities much better than if major crops such as wheat, rice and maize alone were to be cultivated. In the hills and valleys of Nepal, for example, villages may grow more than 150 crop species and cultivated varieties.² However, PBRs generally do not encourage breeding related to minor crops with small markets. This is because the returns on their research investment will be quite small. Rather, they encourage breeding targeted at major crops with significant commercial potential. Moreover, protected varieties of plants may not even

be food crops. In Kenya, for example, until 2000, about half the protected new varieties were foreign-bred roses cultivated for export (see box 7.1).

It is conceivable, then, that PBRs may contribute to a trend whereby traditionally diverse agro-ecosystems, containing a wide range of traditional crop varieties, are replaced with monocultures of single agrochemical-dependent varieties, with the result that the range of nutritious foods available in local markets becomes narrower. Admittedly this trend is a global phenomenon that began before the introduction of PBRs. Nevertheless, it is one that the

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Box 7.1: Plant variety protection: the case of Kenya

When Kenya's Seeds and Plant Varieties Act entered into force in 1975, it became one of the first developing countries to provide for plant breeders rights in national legislation. The Act, which is largely modelled on the UPOV Convention (and its counterpart in the United Kingdom),³ required protected varieties to be novel, sufficiently distinguishable or of a sufficiently pure variety; sufficiently uniform or homogeneous; and stable in their essential characteristics. In addition to these requirements, "the agro-ecological value [of the variety] must surpass, in one or more characteristics, that of existing varieties according to results obtained in official tests."

However, the PBR section of the Act could not be implemented until the 1990s when the Seeds and Plant Varieties (Plant Breeders' Rights) Regulations were passed (in 1994), and the Plant Breeders' Rights Office (PBRO) was established (in March 1997).

Until 2000, most of the 200 or more applications came from foreigners, and were mostly for horticultural varieties, with roses constituting about half the total. The public sector, which produces most new varieties bred in Kenya, has only recently begun to show interest in seeking protection. Its applications are now on the rise. While new firms are starting up, given the amount of time it takes to breed new varieties,⁴ it is likely to be several more years until any increased private sector breeding activity is reflected in a rise in the number of applications.

With respect to research priorities, one of the PBRO staff members warned that: "PBR introduction is likely to weaken research on crop varieties that are less economic such as traditional food crops ... The main threat lies in the anticipated displacement of some of the food security crops for cash crops/high value crops. The anticipated shift of research priorities will bring a problem in technology development and transfer for resolving food shortage problems and hence may destabilize food security."⁵ This scenario is plausible. Yet if income from the sale of higher value crops benefits the poor, the system may, nonetheless, be beneficial, on balance, even for the poor.

It is too early to say whether the system is a success or a failure, or how far the Kenyan experience could be repeated in other developing countries. At the present time, the most useful role the PBR system plays is probably that of encouraging the transfer of foreign-bred varieties to Kenya. This is necessary for those products heavily dependent on foreign breeding material, and which are cultivated largely for export. Perhaps the most important of these are cut flowers.⁶

existence of PBRs and their increasingly widespread use may indirectly encourage. On the other hand, developing countries are not prevented from encouraging research on minor crops that are impor-

tant for local communities, either by providing strengthened IPR protection for such species, or adopting other related measures.

Plant breeders' rights and the interests of poor farmers

The second issue is that in most developing countries, a large proportion of the population depends on agriculture for employment and income. Many of these farmers are small-holders for whom seed saving, across-the-fence exchange and replanting are common practices. This is especially in countries (many in Africa) where neither the public nor the private sector plays a significant role in producing or distributing seed. Although the UPOV system allows on-farm replanting, its rules restrict farmers' freedom to buy seed from sources other than the original breeders.

Seed companies argue in response that farmers do not have to purchase PBR-protected seeds just because they are available. They point out that the farmers are free to continue cultivating non-PBR-protected seeds, including traditional local varieties, if they so wish. Therefore their basic freedoms are unaffected by PBRs. While this is likely to be true, folk varieties are often disparaged and may be excluded from government-approved seed lists.⁷ Moreover, in many developing countries, government support for farmers, including credit, is sometimes conditioned on the sowing of particular crops and types of seed, such as hybrids. Also, seed aid is used by providers as a way to promote the use of particular crops and seeds.

Regardless of the arguments on both sides, it is true that the *sui generis* clause in TRIPS does give governments a certain amount of freedom to tailor their PBR systems to address such concerns. Thus, while an increasing number of developing countries are joining UPOV, some countries are devising alternative PBR systems that aim, in part, at strengthening food security. They do this, for example, by allowing farmers to acquire PBR-protected seed from any source and/or requiring protected varieties to display qualities that are genuinely superior to existing varieties.⁸

Although the seed industry generally dislikes the farmers' privilege, until recently most countries

upheld it, either explicitly or by default. However, since 1994, European Community PBRs restrict farmers' privilege to certain crops, and breeders must be remunerated through the payment of royalties unless they are small farmers, in which case they are exempted. In the United States, the rule used to be that farmers could sell protected seed as long as their "primary farming occupation is the growing of crops for sale for other than reproductive purposes". Since 1994, though, seed saving, while permitted, must be restricted to the amount necessary for on-farm replanting.

Plant breeders' rights are justified on the grounds that they encourage investment in plant breeding; the argument being that without legal protection there would be little incentive to breed new conventionally-bred varieties of plants, especially crops such as wheat and rice that usually self-pollinate, and therefore remain genetically homogeneous through several generations. This is because breeders cannot otherwise legally prevent farmers and rival companies from selling second-generation seed (except, perhaps, through contracts).

The evidence suggests that the introduction of PBRs in Europe and North America has led to increased private investment in plant breeding overall, but that this increase has been modest and targeted at a small number of crop species.⁹ However, even with PBRs, much breeding effort continues to focus on crops such as maize, that are relatively easy to hybridise, rather than on self-pollinating crops bred through the more traditional, crossing and selecting methods. This results in varieties that can be protected by PBRs. The attraction for farmers is that the first generation of hybrid seed is extremely productive. The drawbacks are that the "hybrid vigour" does not extend to harvested seed, which does not even breed true to type. Farmers must consequently buy fresh seed for each planting season. This is a major benefit for the seed companies, which is why they invest so much in hybrid breeding.

While an increasing number of developing countries are joining UPOV, some countries are devising alternative PBR systems

The Indian parliament has passed legislation that would maintain the freedom to save, sell and exchange all produce of a protected variety (box 7.2), and the Organization of African Unity has developed a model law for the consideration of member governments, known as the African Model

Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources.¹⁰ In both cases, at least as much importance is attached to the interests of farmers as to those of breeders.

Box 7.2: The Indian Protection of Plant Varieties and Farmers' Rights Act

In response to TRIPS, the Indian Government chose the *sui generis* option by drafting the Protection of Plant Varieties and Farmers' Rights Act, which was passed by parliament in 2001. The main objectives are: (i) to stimulate investment for research and development, both in the public and the private sectors, for the development of new plant varieties, by ensuring appropriate returns on such investments; (ii) to facilitate the growth of the seed industry in the country through domestic and foreign investment which will ensure the availability of high quality seeds and planting material to Indian farmers; and (iii) to recognise the role of farmers as cultivators and conservors and the contribution of traditional, rural and tribal communities to the country's agrobiodiversity by rewarding them for their contribution through benefit sharing and protecting the traditional rights of farmers.

While sharing similarities with UPOV 1978, additional provisions are included to protect the interests of public sector breeding institutions and the farmers. For example, the bill upholds "the right of a farmer to save, use, exchange, share *or sell* his farm produce of a [protected] variety" except "... where the sale is for the purpose of reproduction under a commercial marketing arrangement".

The Act appears to reflect a genuine attempt to implement TRIPS in a way that supports the specific socio-economic interests of all the various producer groups in India: private sector seed companies, public corporations and research institutions, as well as resource-poor farmers. But it remains to be seen how well it will operate in practice.

The restrictions on access to breeding material may have other causes than IPRs

IPRs and the availability of genetic resources for breeding

Plant breeders and supporters of PBRs in general, tend to stress the necessity of being able to freely access genetic material including that which is IPR protected. This is why the UPOV Convention contains such a broad breeders' exemption. Patent law tends to have a much narrower research exemption, which is often limited to non-commercial scientific or experimental use. Moreover, while a PBR-protected plant variety is covered by a single title, plant-related biotechnological inventions are likely to be protected by a patent and, in some cases, several patents. The patents may cover not just plants, but also genes and DNA sequences. The effect of patents is to restrict access to the patented "products". It has been argued that "locking up" genetic resources with patents is a bad thing because innovation in plant breeding is cumulative and depends on being able to use as wide a stock of material as possible.

The FAO International Treaty introduced a number of provisions to deal with this concern (see box 7.3.) However, apart from patents, the restrictions on access to breeding material may have other causes than IPRs. For one thing, some countries have chosen to exclude certain categories of plant genetic resources, which they consider to be strategically important, from the multilateral system to be set up under the International Treaty. Also, some developing countries have been exercising their rights under the CBD to regulate access to their genetic resources, and in doing so have restricted their free flow. Fowler is of the view that this may well be detrimental to long-term food security.¹¹

But beyond these issues about how specific intellectual property rights privatise genetic material needed for breeding is the association of IPRs with

the privatisation of agricultural research, the shrinkage of non-proprietary public sector research, and the increased concentration of ownership of breeding material, research tools and technologies in the hands of a small number of giant corporations.¹² Not only does this trend reduce the free circulation of

breeding material, but it can also make public policy-making aimed at enhancing food security harder to put into practice. This is because it is much more difficult for governments to influence companies than the public institutions they partly or wholly fund.¹³

Box 7.3: The FAO International Treaty

Recognising both the sovereign rights and the interdependence of countries, the International Treaty on Plant Genetic Resources for Food and Agriculture establishes a multilateral system that aims to facilitate access and benefit-sharing (ABS). ABS is to be regulated principally by means of a standard material transfer agreement (MTA), which will apply also to transfers to third parties and to all subsequent transfers.

One of the most controversial parts of the Treaty is Article 12.3(d), which states that “recipients shall not claim any intellectual property or other rights that limit the facilitated access to the plant genetic resources for food and agriculture, or their genetic parts and components, in the form received from the Multilateral System”. Such an undertaking is to be provided in the standard MTA adopted to regulate the facilitated access. Japan and the United States both opposed this language and abstained from the vote on the adoption of the Treaty.

What exactly is the issue here? In some legal jurisdictions, it is possible to patent DNA sequences and chemical substances that have been isolated from plant material without any structural modification. Therefore a patent holder could restrict – subject to possible research exemptions – use of the protected sequence or compound by others, and even access to it if the patent covered the method of isolation. To some developed countries, allowing such patents is necessary to encourage innovation and disclosure of the “invention”. But to many developing countries (and even some developed countries), this legitimises misappropriation of resources to which they have sovereign rights, and is contrary to the spirit of an international agreement that emphasizes exchange rather than appropriation.

The Treaty does not define Farmers’ Rights. Article 9 states that national governments are responsible for realizing these rights as they see fit, and the Treaty refers to three measures that governments should take to protect and promote them: “(a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture; (b) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and (c) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture”. While none of these is necessarily IPR-related, the last paragraph of Article 9 points out that “Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.”

Genetic erosion: an IPR-related issue?

It is sometimes argued that IPRs have implications for biodiversity. Concerns raised about this tend to focus on the PBR rules of the UPOV Convention that require individual plant varieties to be genetically uniform. Yet the mass cultivation of uniform varieties based on a narrow range of breeding material can result in outbreaks of devastating diseases. This happened with the potato crop in Ireland in the

1840s, and with wheat and maize in the United States in the 1960s and 1970s respectively.¹⁴ Of course, many such disease outbreaks pre-dated the introduction of PBRs in the affected countries. Despite this, critics argue that PBRs encourage the genetic uniformity that can potentially increase the dangers of such outbreaks occurring.

It is argued that IPRs have implications for biodiversity

However, concerns extend also to the agribusiness field more generally. In this context, two questions need to be addressed: do intellectual property rights encourage the spread of monocultural agriculture consisting of genetically uniform varieties? And if so, does this cause erosion of agro-biodiversity? Perhaps one of the most plausible criticisms of IPRs is that they encourage centralized research, as opposed to research tailored to local environmental and socio-economic conditions. According to one commentator, the prevailing policy framework for the use of genetic resources for food and agriculture favours “centralized crop breeding and the creation of uniform environmental conditions, and discourages agro-ecological research or local breeding tailored to local conditions”.¹⁵ IPRs enhance incentives to develop seeds that will have a large potential demand. To ensure maximum demand for their products, the seed companies will tend to focus their research on commonly utilized high-value

crops, and develop varieties that can be cultivated as widely as possible. To do so means either breeding through selection of genes for maximum adaptability, or introducing the new seeds while also promoting farming practices that reduce environmental heterogeneity. The biodiversity-erosive effects of this IPR-supported bias towards centralized crop breeding programmes are: (i) decreased crop diversity; (ii) decreased spatial genetic diversity; (iii) increased temporal genetic diversity, and (iv) increased use of external inputs.

Rangnekar has sought to push the discussion forward by taking a historical institutional analysis of the relationship between PBRs and genetic uniformity. He reaches the interesting conclusion that such IPRs *do* in fact encourage plant breeding based upon existing material already in scientific use, while providing “juridical legitimization to the breeding of genetically uniform varieties”.¹⁶

Increasing trade in agricultural produce through geographical indications

For the many developing countries that are important commercial producers of agricultural goods, food security is far from being the only agricultural issue. They are also likely to want to generate wealth through the increased commercialisation of such goods. This would enable peoples to translate their collective knowledge and long-standing practices into a form of livelihood and income, thus promoting rural development. Here, there is an obvious link to the wider efforts at protecting traditional knowledge – an issue discussed in chapter 8. Geographical indications (GIs) may provide support for such an aspiration, at least for certain products. GIs are defined in the TRIPS Agreement as “indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation, or other characteristic of the good is essentially attributable to its geographical origin”. According to Vivas,¹⁷ the GI concept embraces various elements including: (i) that GIs identify goods rather than services; (ii) that GIs do not protect ideas or procedures, but simply identify and differentiate products in the market; and (iii) that there must be a special link between the origin and the quality, reputation or special characteristics. As Rangnekar points out with respect to wider efforts at protecting traditional knowledge

and rewarding the holders of this knowledge, “GIs are considered useful because of the emphasis they place on the product-place linkage”.¹⁸ He identifies three other key features: (i) knowledge remains in the public domain; (ii) the scope of protection is limited to controlling the class and/or location of people who may use the protected indication; and (iii) the rights can potentially be held in perpetuity as long as the product-place link is maintained.¹⁹

According to TRIPS, WTO Members are required to “provide the legal means for interested parties to prevent: (a) the use of any means in the designation or presentation of a good that indicates or suggests that the good in question originates in a geographical area other than the true place of origin in a manner which misleads the public as to the geographical origin of the good; [and] (b) any use which constitutes an act of unfair competition ...”²⁰

The potential value of GIs has been overshadowed by the discussions in the TRIPS Council. The Agreement makes a distinction between GIs in general and those covering wines and spirits. The issue of the extension to other products of the additional protection provided to wines and spirits under the TRIPS Agreement for GIs has for some time been a passion-

The potential value of GIs has been overshadowed by the discussions in the TRIPS Council

ately debated topic in the WTO. The reason for this debate is that under the TRIPS Agreement, GIs for wines and spirits (Article 23) are offered a higher level of protection. In order to prevent a third party from using a GI for a wine or a spirit, the holder of that GI does not have to prove that such use would mislead the public as to the true geographical origin of the product, or that such use would constitute an act of unfair competition (as is required for the pro-

tection of GIs for other products). The holder of the GI merely needs to show that the product in question does not originate in the indicated area. The debate, as opposed to other controversial issues within TRIPS, has not been a North-South debate but one between the "new" and the "old" world.²¹ The nature of this debate - its pros and cons - are summarized in box 7.4, below.

Box 7.4: GIs Extension under the TRIPS Agreement: The Pros and Cons²²

In favour of extension	Against extension
There is no justification for the continued discrimination of other products with respect to wines and spirits	This imbalance of protection is the result of the Uruguay Round negotiations and should be seen in the wider context of trade policy.
The TRIPS Agreement in Article 24.1 authorizes Members to negotiate on GI extension. ²³	The authorization in Article 24.1 relates to wines and spirits, not to other products.
An authorization limited to wines and spirits would further aggravate the imbalance in protection.	Such limited authorization is aimed at wines and spirits that so far are subject to exceptions under Article 24.
The protection provided by Article 22 is not sufficient: free-riding on a good's reputation remains possible.	The <i>demandeurs</i> have not provided any evidence of economic losses on account of weaker protection.
Article 22 does not address the risk of GIs becoming generic.	The Article 23-protection is not absolute; expectations of economic gains may be diluted through the exceptions under Article 24.
Protection is inefficient due to the difficulties in proving that the public is misled or that there is an act of unfair competition. Article 22 gives the judge wide discretion, which may result in inconsistent decisions and legal uncertainty for rights holders of different products.	A uniform regime for GIs is against the spirit of TRIPS, which establishes only minimum standards.
GI extension will provide a higher level of protection for many reputed products of developing countries, different from wines and spirits.	GI extension is no guarantee for economic success. Benefits will also depend on marketing efforts.
GI extension would not necessarily result in higher administrative costs. It would enable increased ease of enforcement of GIs by the authorities; enforcement of Article 23 protection is similar to trademark protection, with which authorities are familiar.	Developing countries have a smaller number of GIs that could possibly benefit from extension. The burden of protecting foreign GIs would thus fall disproportionately on them. In return, there would be insufficient benefits for their own GIs, because these are often deemed generic in developed countries.
There would be benefits for consumers, who could more easily identify the true origin of a product.	Consumers would be confused, due to the disappearance of certain names, resulting in increased search and transaction costs, at least in the short or medium term.
Like other IPRs, GIs prevent free-riding. In this respect trade disruption and market closure appear justified.	Developing-country industries engaged in free and fair product imitation will suffer losses from market closures.
Affected products may still be sold, but under a different name.	Sales of identical products under a different name might reduce market possibilities.

There are challenges to be faced in realizing the potential that exists in GIs

The EU and the Swiss Government are very keen to promote GIs worldwide, claiming that this part of TRIPS can potentially provide substantial gains for developing countries (box 7.5 describes the Swiss experience with GIs). This seems plausible considering that GIs, much like trademarks, constitute a legal mechanism to identify and differentiate one set of firms' products from those of all firms in the same product category.²⁴ This dual result of identification and differentiation is because of the special characteristics commonly exhibited by a group of firms' product on account of observing a common method of production and of its being produced in the same geographical region. This potential, it should be underlined, exists not just for foods and beverages, but also handicrafts and other hand-made items.

Consequently, advocates such as the EU and Switzerland emphasize the wider rural economic development dimension of GIs. However, there are challenges to be faced in realizing the potential that exists in GIs. Indeed, it may be argued that when countries adopt such an IPR, they implicitly accept "the underlying philosophy of the distinctiveness of local and regional products", and also that "globalization of ... artisanally-based principles" inherent to geographical indications "counters the standardization of products which is normally considered the outcome of the internationalization of the agro-food industries [and] assists small family firms to resist the industrialization and corporatization of production".²⁵

Box 7.5: Protection of GIs: the Swiss experience

The Federal Law on the Protection of Trademarks and Indications of Origin of 1992 sets forth the requirements of protection for GIs. This law applies, for instance, when other protection regimes for agricultural products are not invoked. Under this law, indications of origin - which encompass direct or indirect references to the geographical origin of products or services, including references to their nature or properties having a relationship with their origin - are protected automatically, i.e. *without* prior recognition or registration. To protect competitors in a given region and consumers, the law strictly prohibits the use of: incorrect indications of origin on products, indications that might lead to confusion, and names, addresses or trademarks for goods or services that might lead to deception about the real origin. In order for protection to apply, no notification or registration is necessary.

Although registration is not a prerequisite for general GI protection, the Swiss protection system for GIs does provide for the possibility of their registration for agricultural products: the Ordinance on the Protection of Appellations of Origin and Geographical Indications in respect of Agricultural Products and Processed Agricultural Products of 28 May 1997 establishes a register for geographical names designating agricultural products. Two different kinds of GIs are defined and protected under this ordinance: the *protected appellation of origin* (PAO) and the *protected geographical indication* (PGI). For the PAO, all production steps (harvesting, processing and preparation) must occur within the designated geographical area. In the case of PGI, only one step throughout the production process is required to occur within the designated geographical area. To register a PAO or PGI, a group of producers files an application with the Federal Office of Agriculture including, among other things, a "*specification*" defining the product, a description of the method of production, and a delimitation of the geographical area. A certification body is entrusted with the control of the production, processing and preparation of the product. Once the GI is registered, all producers within the relevant geographical area, who fulfil the conditions of the specification are allowed to use the registered GI. Although no prerequisite for protection as such, the registration entry will be of help for evidence purposes in an enforcement procedure. At the end of 2002, 10 indications had been registered in Switzerland as a PAO or PGI, and 20 applications were pending. Registered GIs include cheeses, meat products, vegetables and spirits.

Investing in products traditional to their geographical origin can have beneficial effects: The promotion of GIs can be one tool for decentralizing a national economy, by linking a specific product and its production to the region from which it originates. Social and environmental benefits, such as maintaining soil cultivation, can result, since the local production and the valuation of those traditional and local products can safeguard employment in rural or remote regions of the country. Effective protection of the identity and reputation of products also allows traditional products and ways of production to be better preserved, thereby also preserving cultural diversity in a country.

Source: Swiss Federal Institute of Intellectual Property

For several developing countries, then, geographical indications would appear to have real potential for developing and exploiting lucrative markets for natural products, including those manufactured by resource-poor farming communities. It appears from case studies of GI-products in Europe that no single factor or set of factors can explain the successful commercialisation of those products. However, reviewing a selection of European case studies, Rangnekar²⁶ identifies the following factors as important: (i) coordination between all firms involved in the production process (i.e. the supply chain) so as to ensure coherence in that process and consistent quality standards; (ii) developing transparent institutional mechanisms for creating and monitoring quality codes; (iii) public policy measures to promote and protect the products in markets at all possible levels - local, national and international, as the case may be; (iv) constant monitoring of the market, in particular to ensure effective market penetration, while simultaneously protecting the

product from "generics" and possible substitutes. But they are useless without good standards of quality control and marketing, and up-to-date information on markets - including foreign ones - if the products are to be exported. At present, the potential of geographical indications for developing countries is somewhat speculative, because this type of IPR has been used only in a few countries outside Europe. It should be borne in mind that many GI-products have fairly small markets, and a relatively small number are traded internationally. Moreover, some countries are concerned that the present enthusiasm for GI-products among Europeans is, to some extent, about restricting competition in ways that may be detrimental to the trade interests of countries capable of producing goods of similar quality, both for domestic consumption and for export to Europe. In this respect, the requirements for "authenticity", "origin" and "product specificity" become entry barriers into niche sub-markets for that class of products.

CHAPTER 7: END NOTES

- ¹ See GRAIN (Genetic Resource International) "Beyond UPOV: Examples of Developing Countries Preparing Non-UPOV Sui Generis Plant Variety Protection Schemes for Compliance with TRIPS", at www.grain.org/publications/nonupov-en-p.htm. See also UNDP et al., "Making Global Trade Work for People", London and Sterling, VA: Earthscan, 2003: chapter 11.
- ² Riley, KW, "Decentralized breeding and selection: tool to link diversity and development", in Sperling L and Loevinsohn M (eds), *Using Diversity: Enhancing and Maintaining Genetic Resources On-farm*, New Delhi: International Development Research Centre, 1996.
- ⁴ See Juma, C, "The Gene Hunters: Biotechnology and the Scramble for Seeds", Princeton: Princeton University Press, 1989: 153.
- ⁵ Chirchir, NJ, "Harmonization of plant breeders rights and policy in public research institutions in Kenya". Policy paper prepared as part of the ACTS Training Course in Policy Analysis for Africa: *Intellectual Property, Technology Transfer and the Convention on Biological Diversity*, 16 June - 26 Nov: 1997: 17.
- ⁶ Van Roozendaal, G, "Kenyan cut flower export blooming", *Biotechnology and Development Monitor* (21), 1994: 6-7.
- ⁷ See Tripp, R, "The structure of national seed systems", in Tripp R (ed.), *New Seed and Old Laws: Regulatory Reform and the Diversification of National Seed Systems*, London: Intermediate Technology Publications on behalf of the Overseas Development Institute, 1997.
- ⁸ See Dhar B, "Sui Generis Systems for Plant Variety Protection", Quaker United Nations Office, Geneva, 2002.
- ⁹ Rangnekar, D, "Access to Genetic Resources, Gene-Based Inventions and Agriculture", London: Commission on Intellectual Property Rights, 2002.
- ¹⁰ The African model's main aim is to ensure the conservation, evaluation and sustainable use of biological resources, including agricultural genetic resources, knowledge and technologies, in order to maintain and improve their diversity as a means of sustaining life supporting systems. There are altogether 11 specific obligations which cover recognition of the rights of local communities and breeders, regulation of access to biological resources, community knowledge and technologies, promotion of benefit sharing mechanisms, and various others relating to participation, community rights, capacity building, conservation and sustainable use of plant genetic resources, agricultural sustainability and food security.
- ¹¹ Fowler, C, "Sharing agriculture's genetic bounty", *Science* 297, 2002: 157.
- ¹² See Herdt, RW, "Enclosing the global plant genetic commons". Paper for presentation at the China Center for Economic Research, 24 May 1999.
- ¹³ It is true though that cash-strapped governments have to reduce their research expenditures out of necessity, and the private sector can play a useful role in taking up the slack.
- ¹⁴ Groombridge, B (ed) , "Global Biodiversity: Status of the Earth's Living Resources", London: Chapman and Hall, 1992.
- ¹⁵ Reid, WV, "Genetic resources and sustainable agriculture: creating incentives for local innovation and adaptation". *Biopolicy Series* No. 2, African Centre for Technology Studies, Nairobi, 1992.
- ¹⁶ Rangnekar, D, "Plant breeding, biodiversity loss and intellectual property rights". *Economics Discussion Paper* 00/5, Kingston upon Thames: Kingston University, Faculty of Human Sciences, 2000.
- ¹⁷ Vivas-Eugui, D, "Negotiations on geographical indications in the TRIPS Council and their effect on the WTO Agricultural negotiations", *Journal of World Intellectual Property* 4(5), 2001: 703-728.
- ¹⁸ Rangnekar, D, "The Socio-Economics of Geographical Traditions", UNCTAD-ICTSD Capacity Building Project on IPRs and Sustainable Development, Geneva, 2003 (forthcoming).
- ¹⁹ *Ibid.*
- ²⁰ See UNCTAD-ICTSD, *Resource Book on TRIPS and Development*, chapter 2.3.

- ²¹ For details on this issue, see Rangnekar D, "Geographical Indications. A Review of Proposals at the TRIPS Council: Extending Article 23 to Products other than Wines and Spirits", 2002. This study has been undertaken within the framework of the present Project and is available on the Project website at http://www.ictsd.org/iprsonline/unctadictsd/docs/rangnekar_may2003_final.pdf.
- ²² See Rangnekar, 2002, op. cit.: 42 *et seq.*, referring partly to Members' submissions in the TRIPS Council.
- ²³ Article 24.1 TRIPS provides that: "Members agree to enter into negotiations aimed at increasing the protection of individual geographical indications under Article 23[...]." Opinions differ over the interpretation of the reference to Article 23. Those in favour of GI extension contend that this refers to the means of additional protection in general, whereas opponents of GI extension argue that the reference is exclusively to wines and spirits. For details, see Rangnekar, 2002, op cit.: 44-45. Irrespective of this controversy, GI extension exists as *Tiret 87* in the WTO *Compilation of Outstanding Implementation Issues* (document at http://www.ictsd.org/ministerial/doha/docs/imp_iss.pdf).
- ²⁴ It is important to note here that while trademarks identify a single firm, geographical indications identify a group of firms.
- ²⁵ Moran, W , "Rural space as intellectual property", *Political Geography* 12(3), 1993: 263-277.
- ²⁶ See Rangnekar, D, 2003, op. cit. (forthcoming).

