Status of Plant Variety Protection (PVP) in the SADC Region

THE NEED TO EXPEDITE PLANT VARIETY PROTECTION IN SADC COUNTRIES

A synthesis of FANRPAN country reports on the status quo and need to implement plant variety protection regulatory systems

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The corner stone of intellectual property protection lies in Article 27 of the 1948 Universal Declaration of Human Rights:

"...it guarantees everyone's right to the protection of moral and material interests resulting from any scientific, literary or artistic production of which he/she is the author".

The need to extend intellectual property rights (IPR) protection to new plant varieties was acknowledged almost a hundred years ago but a formal international Convention on plant breeders' rights only saw the light in 1961 when UPOV (the Union for Protection of New Plant Varieties) was established. In Africa, only four countries are UPOV members, while 16 West Africa states are jointly covered under OAPI (the African Organization for Intellectual Property). In the remaining 35 plus countries, neither farmer selections nor plant breeder varieties are protected. These countries also have limited access to improved varieties from other countries. A draft model law, the SADC Protocol on Plant Breeders' Rights, now facilitates a harmonized approach to rectify the absence in most member states of protection for new plant varieties.

Objective of study

The basic objective of the FANRPAN study into plant variety protection (PVP) systems in five target SADC countries was to establish an overview of the status of legal protection of ownership of plant varieties, as well as experience, benefits and deficiencies in these systems. The study also attempted to quantify impact of adoption or non-adoption of plant variety protection systems. This review is a discussion document to support the SADC Secretariat where a regional PVP office is envisaged, strengthening such an office and building capacity at national level.

Issues addressed and approach

The approach was to analyze regional and international documents, and to update the information through personal interviews and visits to relevant parties in South Africa, Malawi, Zambia, Zimbabwe and Mozambique. Available information on other countries was also obtained. The study covered existing and draft PVP legislation, number of varieties or Plant Breeders' Rights (PBR) lists, and experience with and impact of PVP. South Africa has had patent and trade mark legislation since 1915, became the tenth UPOV member in 1978, and has also made extensive use of contracts and licensing. Also, it was easier to source South African information as the author has extensive personal contacts, while government information could be obtained from websites. Therefore, much of the statistical content of this review relates to South Africa.

Key recommendations

• Compliance with WTO-TRIPS (WTO, 2006) requires an effective IPR legal system for plant varieties. It is in the interest of member states to stimulate plant breeding and access to improved varieties by providing protection to new plant varieties.

• Plant breeders’ rights modelled after the UPOV system will bring SADC into harmony with global PVP; therefore, finalization and adoption of the SADC Protocol on Plant Breeders’ Rights should be expedited.

• Patent legislation should be modernized to include reference to plants and should harmonize with existing laws in other countries, while trademark legislation should qualify that trademarks are eligible for protection, as long as they are not used as variety names.

• Systems for protecting farmer varieties, land races, knowledge, and new commercial varieties rest on different legal bases and should be handled separately. At the same time one cannot strengthen one system of protection by weakening another.

• Protection of land races, farmer selections and indigenous knowledge can only be implemented if documented and if plant selections are collected, described, catalogued, and maintained in gene banks. Where ownership is uncertain, government could act as custodian.

• Production, certification and marketing are matters falling under seed trade regulations and management, and should not form part of the requirements for PVP.

• A task team should be established to collaborate with the SADC Secretariat where a regional PVP office is envisaged, strengthening such an office and building capacity at national level.

Opportunities for plant variety protection

Global intellectual property rights systems are overseen by the World Intellectual Property Organization. Other relevant international bodies and Agreements include various Conventions, Article 27 (b) of the Trade Related Intellectual Property agreement of the World Trade Organization, the FAO International Treaty on Plant Genetics Resources for Food and Agriculture, and the Convention on Biological Diversity.
The focus of the study was on plant breeders' rights as contained in the UPOV-Convention but opportunities in patents, trademarks, contracts/licensing and geographic indications are also covered. New plant varieties are eligible for intellectual property protection under plant breeders' rights provided in the UPOV convention. Eligibility for protection needs to comply with novelty, distinctness, uniformity, stability, and an acceptable denomination (UPOV, 2006). Protection is available for patents on processes and products involving innovative steps that are not natural biological processes. A plant variety per se is not patentable, but micro-organisms are eligible. Trademarks can be applied for special traits associated with plants, but cannot be used as variety names. Contracts and licensing agreements are often used to allocate rights for production and marketing of varieties exclusively to one or a few parties. The potential for using geographic indications for varieties and their products having special values associated with their geographic origin, has as yet not been exploited. New attention is being focused at national and international level on protection of land races and farmer varieties, as well as indigenous community knowledge associated with plants (WIPO, 2006).

Status and experience with PVP

Only Zimbabwe and South Africa have had PBR since the mid 1960s. Varieties with PBR in 2005 number some 50 in Zimbabwe and 1807 in South Africa. The number of active seed companies in Zimbabwe is over 20, listed varieties 214, and breeding companies 11. South Africa has 65 active companies, 1807 PBR varieties, 22 companies, at least four universities and nine public institutions involved in plant breeding of commercial crops. More than 300 varieties are available to Zimbabwean farmers and at least 3500 to South Africans. Zimbabwe has had a major seed industry until a few years ago. The South African seed industry has a turnover of over US$310 million per year, the biggest in Africa. The latter includes exports worth about $80 million.

Many of the 3500 South African varieties are on official variety lists, while others are on industry lists, or unlisted. Since 1978, plant breeders’ rights on new varieties have continued to grow and stood at 1807 varieties by end 2005. Some 39 percent of these belong to South African private and public breeding institutions. Per crop group, these PBRs number 236 varieties for 17 species of vegetables, 774 for 67 ornamental/flower species, 244 for 28 fruit species, 442 for 24 agronomic species, and 111 for 23 forage and pasture species (Department of Agriculture, 2006).

Several SADC countries have made use of contract production for cut flower exports, and of licensing agreements for national production and marketing of varieties. South Africa has made extensive use of PBR, trade marks on a few plant species, and patents on modern plant biotechnology. The system for licensing agreements for testing, seed production and marketing has been successfully used for public varieties released by the Agricultural Research Council. Seed varieties have been licensed to SANSOR (South African National Seed Organization) for sub-licensing, and deciduous fruit trees through SAPO (South African Plant Improvement Organization), while other species were handled directly or through nurseries and producer associations. Use of geographic indications and beneficiation on indigenous food crops remain unexploited in SADC. There is a growing awareness that public institutions also need to adopt IPR systems in order to add value to their research, control market introduction, maintain genetic integrity, and generate funds through royalties. Presently, public institutions make some use of material transfer agreements.

Botswana, Lesotho, and Swaziland have no PBR legislation or drafts, have between 2 and five active seed companies, from zero to 45 varieties on official lists, and no plant breeding companies. Swaziland has five parties doing field trials.

Angola and Namibia have started with a first PBR draft and have four and five seed companies, respectively, 7 to 40 varieties on lists, only government doing breeding, while only Angola has some 6 parties doing trials.

Countries with advanced or final PBR drafts include the DRC, Mauritius, Mozambique, Zambia, Tanzania, and Malawi. The number of seed companies ranges from two to 15, while the number of varieties on official lists ranges from 20 to 200; breeding companies go from nothing to 7, and from two to 15 companies conduct trials.

Impact and benefits of PVP

One objective of IPR studies of this nature is to evaluate the quantifiable impact that IP protection has had. All such previous studies had some difficulty to separate the effect of several factors, namely, a conducive government policy and regulatory
framework for plant variety introduction, access to international germplasm, the opportunity to breed or introduce new varieties of OPVs to extend product range of an enterprise, domestic or international market opportunities for varieties having specific traits, size of the agricultural industry, and availability and effectiveness of legal protection for breeders of new varieties. In SADC only Zimbabwe and South Africa have had long experience with PBR, which limits comparisons.

UPOV investigation: A comprehensive study on PBR in Argentina, China, Kenya, Poland, and Republic of Korea showed the same general trends. These include increased application for protection by both national and foreign breeders after the law had been promulgated, increased number of new varieties coming into the market, improved traits in new varieties, increased access to improved foreign varieties (from which locals could breed) and germplasm, and an increase in the number of plant breeders and of private companies. Further impacts came from new public-private partnerships and national-foreign partnerships in breeding, as well as improvement in crop productivity. Also, sales and royalties gave increased revenue for breeders and their companies (UPOV, 2006b).

Financial benefits: No data were available from country reports and feedback, but some direct and indirect information is useful. Liberalization of seed industries leads to entry by private companies that bring investment, as has happened in most SADC member states. The South African seed industry was driven by local companies and co-ops until the 1960s. Major foreign investment of tens of millions of dollars gained momentum during the last 15 years, bringing also advanced technologies and germplasm. PVP is an important pre-requisite before commercial companies can invest.

Crop production efficiency: Plant breeding and access to improved varieties generally lead to increased yields per hectare. Average South African maize yields per hectare increased over five-fold, and wheat almost five-fold, from 1950 to 2005 (Van der Walt, 1999). Plant variety protection, though not quantifiable, strengthened investment in breeding.

Benefits for farmers: The farmer is generally the major beneficiary of improved varieties. In 1994, the added farmer benefit of increased South African maize yields due to breeding was estimated at $200 million per year. Locally bred peach, plum and apricot varieties protected under PBR contributed $160 000 to exports in 1993. The introduction of the protected Australian apple, Pink Lady, added direct profits of $10 million for farmers. In Zimbabwe, Zambia, Uganda and Kenya, farmers benefit from export of cut flowers, all controlled under strict contracts. More opportunities can arise if protection is strengthened by PBR.

Export earnings: Most SADC countries can benefit from producing and exporting seed. Zambia exported several thousand tons of seed in 2005, Zimbabwe had a long track record as a major exporter (recently an importer), and South Africa exported over 21 000 tons worth an estimated $80 million in 2004. Most companies will not sell new varieties, or have seed produced, in countries where there is a danger of alienation of proprietary varieties. Biotech companies will not make available GM seed for testing or sales unless importing countries have biosafety systems and IPR in place. The potential for producing off-season seed for the northern hemisphere and for regional trade is substantial.

Although available data do not enable an adequate empirical analysis of the direct beneficial impact of plant variety protection systems, it is clear that PVR remains a major factor. The South African fruit industry is adamant that its multi-billion dollar exports are based on improved varieties and that access to these is underpinned by PVP. Breeders generally agree that PVP boosts investment in breeding. Seed companies interviewed have a policy that they will rarely make available seed of proprietary OPV or self-pollinated varieties for testing and marketing in countries that do not provide protection. Therefore, even though breeding and marketing of new varieties require an enabling regulatory environment, it is the presence of efficient IPR that is a key factor in such development.

Finally, legal protection of plant varieties is not a sole requirement for access to new, improved varieties. It has to be seen against government policies that are conducive to development of private seed industries, and facilitate variety registration and transboundary movement of seed. For these reasons adoption of PVP will have to be supported by adoption of harmonized seed regulations and regional variety lists.
This synthesis of FANRPAN country reports on the status of and need to implement plant variety protection regulatory systems was compiled by

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References:
Department of Agriculture (South Africa), 2006. www.nda.agric.za/publications > go to Plant Variety Journal Special Edition
UPOV, 2006a: www.upov.int/
WIPO, 2006: www.wipo.org/
Acknowledgement of photo of wheat emasculation:
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