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Patricia Kameri-Mbote*
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ABSTRACT

This paper addresses the link between Intellectual Property Protection (IPP) and Genetic Use Restriction Technologies (GURTS). The central issue is the impact of IPP for GURTS innovations on access to seeds and technologies by farmers in developing countries. It focuses on Intellectual Property Rights (IPRs) considerations and other related regulatory aspects regarding the potential impact of GURTS in Eastern and Southern Africa (ESA). While both IPRs and GURTS allow control over the use of genetic materials, they differ in the mode of control. Thus, the question always is how the countries in the region can use regulatory mechanisms to harness the positive impacts of GURTS without compromising their national and regional sustainable development goals.

I. INTRODUCTION

The role of intellectual property rights in the attainment of sustainable development continues to be a subject of great interest among different groups of people. Historically, IPRs, particularly patents, have been considered a tool that fosters economic development by promoting innovation and inventiveness. In contemporary terms, national views on the merits and demerits of IPRs tend to break down along the lines of who is developing new technologies and who needs them.¹ Existing conventions on intellectual property protection (IPP) favour those with ready access to economic and legal resources and can work unfairly against those who do not have such access.²

The internationalisation of intellectual property protection through the World Trade Organization's Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)³ ensures that the technology owner has protection of their IP in all areas of technology. Discussions about the implications of this provision in the context of a human

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1 Advancement Foundation International, *Conserving Indigenous Knowledge: Integrating Two Systems of Innovation* (A Study by Rural Commissioned by UNDP 1994).

See also, Rohini Acharya, *Intellectual Property, Biotechnology and Trade: The Impact of the Uruguay Round on Biodiversity, Biopolicy International No. 4* (ACTS Press, Nairobi 1992).

2 International Development Research Centre, *The Crucible Group, 'People, Plants and Patents: The Impact of Intellectual Property on Biodiversity, Conservation, Trade and Rural Society* (1994) 54.

3 Marrakesh Agreement Establishing the World Trade Organization, Agreement on Trade-Related Aspects of Intellectual Property Rights, Annex C signed in Marrakesh, Morocco on 15 April 1994.

right to food and healthcare have generated considerable heat at the international level. The protection of IP in the realm of food and healthcare is not always easy to reconcile with these rights where access is hindered by the existence of IPRs.⁴

IPRs have generally been conceived as statutory rights which can only be justified from a societal point of view if they are balanced with specific clauses in the public interest. Thus, patents are usually granted for a limited duration and the patentee has to disclose his/her invention in return for the monopoly rights granted by the state. For a long time, IPRs were conceived as a purely technical tool which contributed to technological development. This theoretical premise has been challenged over time from different directions.

Firstly, the appropriate scope of protection has been the object of debates for a long time. The balance between the need to provide incentives for research into new technological innovations and the desire to reward inventors has always been difficult to find since someone's innovation may be someone else's basic research material for a different type of innovation. In recent years, these concerns have become increasingly pronounced.

Secondly and related, it has become apparent over the past couple of decades in particular that it is not tenable to separate IPRs from sustainable development. In developed countries, the granting of life patents has progressively blurred the line between human inventiveness and nature's creation. In developing countries, the adoption and implementation of the TRIPS Agreement has clearly brought out the fact that the introduction of IPRs has not only economic and technological consequences, but also human rights, social, environmental and agricultural consequences.⁵ Indeed, the biggest challenge that African countries face today is the need to reconcile the introduction of the minimum standards of intellectual property protection of the TRIPS Agreement with the need to comply with all their international and national sustainable development commitments.

Following the adoption of the TRIPS Agreement and its progressive implementation in developing countries, debates concerning the contribution of IPRs to economic and social development have become much more pronounced. The TRIPS Agreement firstly, commits developing countries to significantly raise their standards of intellectual property rights protection even though it is generally accepted that this will at best have some positive results in the long term for most countries.⁶ Secondly, the TRIPS Agreement makes few concessions for the smaller, economically weaker countries, including in particular few concessions to least developed countries. Limited differentiation has led to major controversies such as the controversy concerning access to drugs in countries severely affected by HIV/AIDS. Thirdly, in the context of increasing appropriation of knowledge through intellectual property rights which has characterised developed countries over the past couple of decades, there are renewed debates over the 'appropriate' level of intellectual property protection for social and economic development.

4 Patricia Kameri-Mbote & Philippe Cullet, *International Property Protection and Sustainable Development – Towards a Common African Institutional Framework and Strategy* (A Background Study Commissioned by the Science and Technology Commission of the New Partnership for Africa's Development December, 2004).

5 *ibid.*

6 Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy* (London: CIPR, 2002).

In a North-South context, concerns over the appropriate scope of intellectual property protection include the whole gamut of issues debated in developed countries and a host of other issues. Among a number of initiatives that have been taken in recent years to address some of the IPR-related problems in developing countries, the 2002 report of the Commission on Intellectual Property Rights stands out.⁷ It provided a largely balanced account of the pros and cons of intellectual property protection in developing countries and found that there were a number of significant problems in the existing system.

The interface between intellectual property protection and sustainable development has become most pronounced as biotechnological innovations have progressed. In addressing IPRs and biotechnology in Africa, the issue of genetic resources and the role that these resources play in African countries is pivotal to the perception of proprietary rights. This is linked to the value of the resources and the issues of access, control and ownership. IPRs for biotechnological innovations raise heated debates at the international, regional and national levels over, firstly, control of biotechnology IPRs and, secondly, ownership of biotechnology inventions in instances where a different person other than the one that has come up with the invention has nurtured the resources.⁸ The valuation scale does not indicate a continuum from the raw material to a transformed product. There is a marked dichotomy between the valueless raw germplasm and the commodified varieties that are processed in laboratories.⁹

Relevant IPRs in the field of biotechnology are patents and plant breeders' rights (PBRs).¹⁰ Traditionally, plants were excluded from patentability and were governed by PBRs.¹¹ The gradual move towards patenting of life forms in the US first affected plants and has recently been extended to animals. Since the case, in the US, of *Diamond - v - Chakrabarty*, biotechnology IPRs is liberally granted. The Supreme Court held in that case that it had no objection to the grant of patent rights that these were living organisms and that the patent system should grant patent protection for "everything under the sun made by the hand of man".¹² Many African countries exclude plants and animals from patentability. With respect to plants, countries provide for plant variety protection through plant breeders' rights.

7 *ibid.*

8 Patricia Kameri-Mbote *et al*, *Unlocking Africa's Future : Biotechnology & Law* (Forthcoming 2015).

9 Vandana Shiva, *Monocultures of the Mind : Perspectives on Biodiversity and Biotechnology* (1993).

See John H Barton & Eric Christensen, *Diversity Compensation Systems: Ways to Compensate Developing Nations for Providing Genetic Materials in Seeds and Sovereignty – The Use and Control of Plant Genetic Resources* (Jack R Kloppenburg, Jr. ed, 1988).

338 [Shiva:1994 Debate on commodification of seed – from a means of production and product to a commodity with a price tag].

10 Trademarks also relate to biotechnology in instances where products of biotechnology are branded to distinguish them from other products of competing firms. This is especially the case in the area of pharmaceutical products.

11 See, for instance, Rebecca S Eisenberg, 'Proprietary Rights and the Norms of Science in Biotechnology Research' (1987) 97 *Yale L.J.* 177 [188].

12 *Diamond vs Chakrabarty*, 100 S. Ct. 2204, 2208 (1980). Chakrabarty applied to patent a bacteria from the genus *Pseudomonas* containing therein at least two stable energy generating plasmids, each said plasmid providing a separate hydrocarbon degradative pathway. The US Supreme Court held that 'the patentee had produced a new bacterium with markedly different characteristics from any found in nature... His discovery is not nature's handiwork, but his own, accordingly, it was patentable.'

This genus of IPRs was first developed within the context of the International Convention for the Protection of New Varieties of Plants (UPOV).¹³ These rights were an alternative to fully fledged patents and were seen as more flexible and admitting of seed exchange between farmers and breeders.

The key questions that arise in Sub-Saharan Africa generally, in relation to IPRs, are threefold. Firstly, whether there is evidence that inventors are being encouraged by the system to invent new products and processes to improve older technologies. To this end, there is need to establish evidence that links rates of inventions to the existence of IPRs as an incentive to invent. Secondly, whether there is evidence of an improvement in and maintenance of high rates of inventiveness as a direct result of IPRs. In other words, are IPRs fostering improvements in the rate of technological development in the biotechnology realm? Thirdly, whether inventors in the region appreciate the concept of IPRs as a form of reward for inventions, consequently encouraging them to engender new ideas and invent. Basically, are the theoretical functions of IPRs being successfully translated practically in the field of biotechnology on the Sub-Saharan scene?

The role of IPR in Africa's development has to be considered within an array of factors. On the one hand, African farmers have limited access to seeds and technology. This is blamed on restrictive IPRs that act as a barrier to acquisition of seed and propagative material as well as the use of genetic use restriction technologies which limit farmers' use of seeds. The ownership of IPRs, specifically patents, by developed-country based multinational corporations is replicated in the realm of biotechnology. This domination of world food products by a few companies and perceived increased dependence on industrialised countries by developing countries pits the latter group of countries against IPRs. The situation is not helped by examples of biopiracy and foreign exploitation of natural resources of poor countries by industrialised countries.

In developing countries it might have been expected that technological innovations would be spurred by such regulatory tools as intellectual property rights (IPRs) and that those innovations would be of such a nature as to promote sustainable development. However, it seems that these expectations are unlikely to be realized. This is so mainly because of the following. First the modern trends in international intellectual property (IP) rulemaking tend toward a single model or a one-size-fit-all approach to IP. Secondly, it has been amply demonstrated elsewhere that this approach is not compatible with developing country needs.¹⁴

It is within this context that this paper addresses the link between intellectual property protection (IPP) and genetic use restriction technologies (GURTs). The central issue is the impact of IPP for GURTs innovations on access to seeds and technologies by farmers in developing countries. GURTs, also referred to as terminator technologies, are said to have great potential to impact significantly on the seed industry and the organisation of agriculture since they alter a fundamental characteristic of the seed, its self-reproducing

13 The International Union for the Protection of New Varieties of Plants, International Convention for the Protection of New Varieties of Plants, UPOV Convention (1961), as revised at Geneva (1972, 1978 and 1991) Status on May 12, 2009.

14 See for instance, *UK Commission on IPRS Integrating Intellectual Property Rights and Development Policy* (12 September, 2002).

nature and threatens to change agricultural practices developed over millennia.¹⁵ Not surprisingly, they are perceived as unethical and immoral and with negative impacts for millions, especially the resource poor farmers, because of their focus on returns on investment as opposed to access to seeds.

So far, the works of the Food and Agriculture Organization (FAO) of the United Nations and the United Nations Environment Programme (UNEP) on GURTs provide some of the most instructive analyses of that subject. This paper partly draws on these pieces of technical literature about GURTs. It is, however, important to point out that while there is relatively little information about GURTs at the global level, there is hardly any reliable information on GURTs in Eastern and Southern Africa (ESA). Thus, the most one can glean from the little information currently available regarding the ESA situation is speculative conclusions.

This paper centres on the interplay between GURTs and IPRs. Terminator technologies are really induced technological responses to inadequacies and weaknesses of existing intellectual property protection (IPP).¹⁶ To that extent, the question of whether GURTs are an IP issue or not is, in our view, moot. GURTs are innovations which are amenable to IPP. The commonplace view is that, first, GURTs are 'bad' and second, IPRs promote GURTs. If both IPRs and GURTs allow control over the use of genetic materials, one might be tempted to claim that there is an association between IPRs and GURTs. However, it is hard to see how that association is causative. In other words, the rise of GURTs may not be fairly traceable to the protection of IPP.

Against that background, this paper focuses on IPRs considerations and other related regulatory aspects regarding the potential impact of GURTs in ESA. While both IPRs and GURTs allow control over the use of genetic materials, they differ in the mode of control. Thus, the question always is how the countries in the region can use regulatory mechanisms to harness the positive impacts of GURTs without compromising their national and regional sustainable development goals.

This paper suggests that IPRs, or anything akin to IPRs, are inadequate to enable ESA countries avoid the real or potential adverse impacts of GURTs. This is largely because IPRs provide *legal control* over the use of genetic material, whereas GURTs provide *technological control*. The relevance of this distinction lies in the fact that GURTs transcend the legal realm in the sense that they may apply whether or not the technology in question is itself subject to legal protection (in the form of IPRs or related *sui generis* regimes). The absence of technological capacity on the part of ESA countries may, indeed, disadvantage them when it comes to the use of GURTs to secure their innovations. The legal control over genetic material provided by IPRs, on the other hand, is limited to the innovations that satisfy criteria for IPP. There are potential benefits, costs and risks of IPP for GURTs from different viewpoints. (See Table A) ESA countries need to assess these and align them to different actors within their territories to determine the best way to go with GURTs.

15 CS Srinivasan & C Thirtle, 'Terminator Technologies in Developing Countries,' in RE Evenson et. al, (eds) *Economic and Social Issues in Agricultural Biotechnology*, (CABI Publishing, Oxon & New York, 2002) 159 and 162.

16 *ibid.* Similar measures have been taken in the realm of copyright to prevent copying of music and software.

Table A: Genetic Use Restriction Technology (GURT): Potential Economic Benefits, Costs & Risks

	Benefits	Costs	Risks
Farmers	Increased productivity from improved inputs due to increased research and development (R & D) investment	Increased input costs from seed purchase (including transaction costs)	Misuse of monopoly powers by breeders Reduced seed security and access to genetic improvements (marginalized framers)
Breeders (especially Private Sector)	Increased appropriation of research benefits from new products	Increased cost for access to gene pools of other breeders	
Governments	Reduced investment requirements in breeding Fewer enforcement costs for plant variety protection (PVP)	Complementary R & D investment requirements Other regulatory sources	
Society	Increased agricultural productivity		Reduced genetic diversity in fields

Source: D. Eaton et al., *Economic and Policy Aspects of 'Terminator' Technology, Biotechnology and Development Monitor*, No. 49, p 19-22

II. GENETIC USE RESTRICTION TECHNOLOGIES (GURTS)

GURTs may be defined as a set of 'technological means that rely on genetic transformation of plants to introduce a genetic switch mechanism which prevents unauthorized use of either particular plant germplasm or trait(s) associated with that germplasm.'¹⁷ In other words, GURTs is a term that describes a class of biotechnology-based switch mechanisms applied to restrict the unauthorized use of genetic material. There are two types of GURTs, namely variety-use restriction (V-GURTs) and use-restriction of a specific trait (T-GURTs). V-GURTs, also known as 'terminator' technology, renders the subsequent generation sterile, whereas T-GURTs, also known as 'technology protection system', requires the external application of inducers to activate the trait's expression. T-GURTs refer to a set of technologies that, using an external trigger, make it possible to switch on and off specific characteristics of a plant, such as resistance to disease.

The opponents of GURTS argue that there are no profound agronomic benefits other than imposing a limitless biological patent on the relevant crops. Moreover, T-GURTs may exacerbate this situation by creating dependency on costly seeds and chemicals as well as the foreign companies that produce them. The diffusion of such technologies to farmers is also seen as problematic and they also deny farmers their democratic rights to choose. Altogether, T-GURTs are argued to be a threat to food security. The potential negative impacts range from loss of agricultural biodiversity to alteration of ecosystems and widening of the technological gap between resource-poor and better-off farmers.

17 R Jefferson et al, 'Genetic use Restriction Technologies' (1999) see also UNEP/CBD/SBSTTA/4/9/REV/Annex.

The proponents of this technological innovation argue that it is self-regulating. It provides a biological means of strengthening IPP on newly developed agricultural crop varieties or animal breeds. This enables the technology owner to restrict others from reproducing their innovation.¹⁸ Thus, it can reduce the costs of policing seed patents or breeders' rights. In turn, this allows innovators to capture the returns to their investments as well as encourage further innovation. Also, it prevents horizontal gene transfers from GM crops because it has an in-built safety mechanism to prevent germination of seeds produced from unwarranted pollination from transgenic plants. It can also be used in 'precision agriculture' to turn specific traits on and off when that is desired by the farmer or breeder. GURTs, therefore, present a useful tool for containing transgenes in biosafety systems.

A. GURTS and IPRs

Both IPRs and GURTs provide control over the use of genetic material. However, GURTs are designed to provide a genetic, in-built, protection against unauthorized reproduction of the seed or the added-value trait. GURTs, thus, may be broader, more effective and less limited by time constraints than the protection conferred by intellectual property rights.¹⁹

Due to the potential adverse impacts of GURTs on food security, agro-biodiversity, environment, and so on, policy and regulatory concerns have tended to unduly revolve around whether and how IPRs mechanisms might be used to discourage GURTs. This approach is inadequate largely because of the following. While IP legislation could invalidate IPRs on certain types of GURTs, for instance, those that are adjudged repugnant to the national food policy, that invalidation does not necessarily mean that those particular GURTs will no longer be in use. This is because of the very nature of GURTs - which GURTs are capable of being applied irrespective of whether or not they are subject to legal protection. That is, the biological, in built mechanism prevents infringement. In fact, there seems to be anecdotal evidence to suggest that denial of patents on GURTs could actually spur their commercial use. Therefore, the most appropriate approach to discouraging the use of GURTs might be to use a mix of policy and regulatory tools restricting use.

However, regarding the potential impact of GURTs on the regulatory framework, it is interesting to note that FAO recommends :

GURTs, by increasing the level of technological protection over the product, may result in a significant lowering of transaction costs that would otherwise have been required to enforce the intellectual property protection through legal channels, and may ensure such protection in countries with no IPR systems in place. This could ensure a higher return to breeders and thus motivate increased R&D investments. If the higher returns were passed on to the farmer, this might result in cheaper seed.

18 D Eaton et al, *Economic and Policy Aspects of 'Terminator' Technology*, (49) Biotechnology and Development Monitor, 19-22.

19 R Jefferson (n17).

The policy question facing governments is whether increased technological protection to genetic resources by GURTs is desirable, and how this would interface with IPR regimes. In this, governments may wish to distinguish between GURTs applications that offer intrinsic production increases, and those that serve merely as use restriction strategies.²⁰

As the US comments on the FAO Report rightly point out, the recommendation that countries may discriminate in their national laws between those GURTs that enhance agricultural production and those that mainly serve to restrict use of specific genetic material, fails to take into account countries' obligations under international regulatory instruments, such as TRIPS. For instance, Article 27.1 of TRIPS forbids discriminations on the basis of technology. Thus, the recommended approach might violate TRIPS.

Relatedly, Article 27.2 of TRIPS states that:

members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law.

The FAO Report mentions this provision. A number of concerns, however, still remain. *First*, already many countries that are parties to TRIPS have opted to exercise their rights under that provision by expressly providing in their relevant national regulatory frameworks that IP protection would be denied on technologies that represent a danger to the environment or human, animal or plant health. However, the difficulty is that to date there is no conclusive evidence that GURTs actually pose such a danger. Having said that, the question arises on whether WTO TRIPS members that are also parties to the UN Convention on Biodiversity²¹ (and the Cartagena Protocol on Bio-safety²²) might wish to apply the precautionary principle and, hence, prohibit deployment of negative traits of GURTs on that basis.

Second, and perhaps more importantly, even if one were able to exclude from IP protection certain GURTs under Article 27.2 of TRIPS, there might still remain the other problem of restricting use. As discussed above, exclusion from patentability does not necessarily mean the technology may not be used.

Within the context of the Convention on Biological Diversity, an Ad-hoc Technical Expert Group meeting on the potential impacts of genetic use restriction technologies on smallholder farmers, indigenous and local communities and farmers' rights was held in 2003.²³ The meeting identified potential positive and negative impacts of GURTs on

20 CGRFA 9/02/17 Annex, 'Potential Impacts of GURTs on Agricultural Production Systems: Technical study' [44].

21 United Nations Conference on Environment and Development: Convention on Biological Diversity (Done at Rio de Janeiro) June 5, 1992, reprinted in 31 I.L.M.818 (1992).

22 Cartagena Protocol on Biosafety, Protocol to the on Convention on Biological Diversity Convention, 39 ILM 1027 (2000).

23 UNEP/CBD/SBSTTA/9/INF/6-UNEP/CBD/WG8J/3/INF/2, 29 September 2003.

smallholder farmers and indigenous and local communities. The main negative impacts identified comprised gene flow and environmental containment where the genes could escape and pass on to other members of the same or other species. This was perceived as being of particular concern in the centres of origin.

The biosafety advantage of GURTs, particularly V-GURTs sterility which makes the technology potentially useful in preventing unwarranted escape of genetic material into the wild, was seen as promoting genetically modified crops. Further, the promotion of GURTs could prevent and/or reduce further research on gene containment alternatives at a legal and biological level. Other potential negative impacts included reduced availability of new varieties, unintentional use of GURTs-foodgrain as seed, dependency, intentional misuse and diversion of agriculture research and development resources from the public sector to the private sector.²⁴

The potential impacts of GURTs on Farmers' Rights were identified as restriction of traditional practices, such as seed saving, farmer breeding and unhindered exchange of seeds. GURTs were also seen as increasing opportunities for appropriation of genetic resources by the developers and owners of the technology, beyond the possibilities of hybridisation, outside the bounds of patents, other IPRs and regulatory systems. The appropriation and enclosure of elements of traditional knowledge and genetic resources through GURTs' IPP will negatively impact the rights of smallholder farmers, indigenous and local communities to equitably participate in the sharing of benefits arising from the utilisation of plant genetic resources.²⁵

III. INTERNATIONAL RULEMAKING AND STANDARD SETTING ON IP

A. Philosophical Foundations of IP

There are various justifications of IP protection. However, the main ones revolve around desert and reward. The argument goes that the creator of something deserves something in return for their effort. That reward may take the various forms but the generally accepted one is ownership. Relatedly, the utilitarian argument maintains the position that creations of the human mind are necessary for the development of society and that such creations gain fresh impetus from some rewards. In other words, innovators expend a lot of time, effort, money and other personal resources to generate and develop ideas and they need incentives to so work. Given that there would be the greatest happiness to the greatest number of members of the society if new ideas were generated, then innovators should be rewarded in one form or another.

This utilitarian justification for IP appears to have been adopted in the World Trade Organization (WTO). The WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) essentially treats IPRs as economic or commercial rights. However, it captures the utilitarian justification in the Article 7 objective that IP protection should contribute to the promotion of technological innovation and to the transfer and dissemination of technology.

24 *ibid.*

25 *ibid.*

Two important issues arise from the foregoing. *First*, critics might question the justice of rewards. For instance, is ownership, whether in the form of IPRs or not, the best or a just reward? Indeed, it might be arguable by a utilitarian that putting all ideas in the public domain (for instance, by relaxing or abolishing IPRs) would be more beneficial to society as anyone could work on or develop anything and, therefore, generate more innovation.

Second, critics often point out that to say IP stimulates technological innovators is little more than an article of faith. Put in another way, does IP actually encourage innovations? To be sure, in the context of the WTO, some developing countries are increasingly becoming pessimistic in reference to the question of whether the object and purpose of TRIPS in establishing a viable technological base in all countries is achievable. It is partly due to this that there is the attempt to move from the TRIPS Council of the WTO to the World Intellectual Property Organization (WIPO). The question however is, is the forum shift necessary? A further question from the point of view of this paper is whether the question of GURTs is best addressed within the context of WTO and WIPO.

B. Institutional Anchorage of IP

The World Intellectual Property Organization (WIPO) was established in 1970 by a convention that was adopted in 1967. A specialized agency of the UN since 1974, WIPO administers over 20 multilateral treaties on different aspects of IP and counts 179 nations as member states. The main role of WIPO is to assist developing countries in enactment and enforcement of IP laws, to bolster international cooperation in the development of international and regional IP law, and to assist countries in the development of skills necessary for the enforcement of IP.

In the 1980s, there emerged a shift from WIPO to the General Agreement on Tariffs and Trade (GATT) Uruguay round of multilateral trade negotiations. These negotiations eventuated in, among others, the inception of TRIPS under the aegis of the WTO in the 1990s. The imperative issue is why the world of IP was forced into the realm of the WTO. A number of reasons might be given for the forum shift. First, WIPO lacked a formal court-like dispute settlement mechanism. Second, WIPO gave states enormous sovereign discretion over IP standard setting. In light of this flexibility, the competitiveness of countries that relied a lot on information-based goods and services was threatened, at least to the extent that any developing country would enjoy relatively low standards of IP protection. Relatedly, WIPO lacked a linkage – bargain diplomacy whereby countries could agree on trade-offs in return for concessions in other areas. Nevertheless, as mentioned above, some developing countries are pushing for a shift from the WTO TRIPS to WIPO. What are the important trends at WIPO that might have led to this forum shifting?

The Convention on Biological Diversity addresses IPRs to the extent that they are relevant for meeting its objectives, namely, conservation of biological diversity, sustainable utilisation of its components, and fair and equitable sharing of benefits emanating from the resources. Article 15 of the Convention, while recognising the sovereignty principle enunciated at Article 1, provides that the state concerned should exploit its resources according to environmental policies and should endeavour to conserve the resources and promote their sustainable utilisation. The Convention also seeks to ensure both the availability of biological resources for the scientific community and the enjoyment of

the benefits accruing therefrom to the state providing the resources.²⁶ The Biodiversity Convention recognises the need to ensure equitable allocation of ownership rights and intellectual property rights to biotechnology. Further, while stressing the need for recognition of intellectual property rights, Article 16 provides that such rights should support the objectives of the Convention and not run counter thereto.²⁷

It emphasises the need to have the intellectual property rights enhance the objectives of the Convention, but does not provide which of the two should prevail in the event of a conflict.²⁸ Article 22 of the Convention also intimates the possibility of property rights being overridden where they threaten serious damage to the environment. From the foregoing, it is clear that GURTs IPP are the subject of different normative and institutional regimes, ranging from the CBD and the WTO TRIPS to WIPO.

IV. MODERN TRENDS IN THE WORLD OF IP

A. The Cost of IP Systems

Although there are no definitive studies on the impact of TRIPS on developing countries, reliable empirical estimates indicate that, overall, developing countries lose from protecting IP even at the minimum standard in TRIPS.²⁹ These studies appear to support speculations that had been made prior to the adoption of TRIPS. As one economist had predicted, 'all evidence and arguments... point to the conclusion that... the effect of enhanced IPR protection... will be a transfer of wealth from [developing countries] to foreign, mostly industrial country firms.'³⁰

When the cost of maintaining an IP system (in terms of both money and practicability and difficulty) is assessed in light of the meager resources of many developing countries, especially those from the ESA region, one might wonder whether it makes sense for these countries to be subjected to onerous IP regimes like TRIPS. However, given the nature of IP and the measurement problems associated with it, our understanding of its role in the economic development process is incomplete. Yet, despite this fact, it might be probable to employ a balanced and scientifically based risk/benefit analysis for case-by-case assessment of the role of IP. Currently, there appears to be no such information available. This is the lens within which one looks at IPRs for GURTs

26 Article 16, It exhorts states entering into agreements for access to genetic resources to take legislative, policy and administrative measures to ensure fair and equitable sharing of the research results and benefits arising from the commercial utilisation of the resources between the parties. It also recommends the participation of the source state in scientific research using resources from such state.

27 See Biodiversity Convention, Article 16 (4) (n73) which provides that "Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall co-operate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives."

28 Philippe Sands, *Principles of International Environmental Law* 678 (2003).

29 L Sanjaya and M Albaladejo, *Indicators of the Relative Importance of IPRs in Developing Countries* (Paper commissioned by UNCTAD/ICTSD, November 2001).

30 D Rodrik, 'Comments on Maskus and E by-Konan' in A Deardorff and R Stern (eds), *Analytical and Negotiating Issues in the Global Trade System* (University of Michigan Press Michigan 1994) 449.

B. Speculations About a (New) Development Agenda in WIPO

Since the 2001 Doha WTO Ministerial Conference, development issues have come to the forefront of debates on IP in both the WTO and WIPO. In the WTO, for instance, not only is the TRIPS Council directed to follow TRIPS objectives and principles, but it is also obliged to take development objectives fully into account.³¹

Moreover, the preamble to the WTO Agreement states, in pertinent part, the objective is to ensure the 'use of the world's resources in accordance with the objective of sustainable development'. This objective has attracted jurisprudential attention in some WTO disputes. For example, the Appellate Body in the *US – Shrimp* case stressed that this language of the WTO preamble 'demonstrates recognition by WTO negotiators that the optimal use of the world's resources should be made in accordance with the objective of sustainable development'.³²

For developing countries that are eagerly desirous of removing the IP agenda from WTO TRIPS back to WIPO, it might be important to consider the modern trends regarding integrating IPRs and development objectives. Apparently, WIPO's mandate does not come out clearly on this issue. From the way WIPO has approached a number of IP problems, it is not entirely clear how development objectives are brought to bear on WIPO solutions. Accordingly, as detailed immediately below, it is difficult to adequately assess developing country perceptions of WIPO.

C. Changing Perceptions of Developing Countries

The classic argument for the move by developing countries from the TRIPS Council of the WTO to WIPO is likely to be that WIPO is more developing country friendly than WTO. There is no doubt that prior to the inception of the WTO, WIPO proactively promoted policies that probably favoured developing countries. Nowadays, however, WIPO has had to adjust itself to accord with the reality that obtains in the global era of the governance of IP. This adjustment has been characterized by such practices as adoption of a dispute settlement mechanism and attempts at harmonization/internationalization of standards. For example, WIPO's work on a patent law treaty brings with it both costs and benefits for developing countries.

There is also an on-going work in WIPO on traditional knowledge and folklore. While many developing countries are likely to support this work on the ground that they are the main producers of such creations, it is worth pointing out that that may not necessarily be the case. Besides the fact that 'African countries have received little assistance from the WTO, WIPO or other relevant organization with regard to IPRS ... whenever any assistance is forthcoming it appears to be disadvantageous from a developing country's perspective.'³³

31 Doha WTO Ministerial 2001: Ministerial Declaration (14 November 2001) WT/MIN (01)/DEC/1 (Doha Implementation Decision) Paras 17-19.

32 WTO, United States; Import Prohibition of Certain Shrimp and Shrimp Production (AB – 1998 – 4 Report of the Appellate Body, WT/DS58/AB/R) 153.

33 J Ayamunda '*Bilateralism and TRIPS*,' (Unpublished MLitt Thesis, Oxford University 2004) 152.

For instance, if some developing countries that turned to WIPO for legislative assistance were made to implement their national IP laws more extensive protection than is otherwise required under the already onerous TRIPS, it is difficult to see how WIPO can be said to be considerate towards developing countries development needs.

V. THE POTENTIAL IMPACT OF GURTS IPP IN ESA

It must be stated at the outset that there is no scientific evidence or any data that assesses the impact of GURTs on agro biodiversity and related issues in reference to the Eastern and Southern African region. However, a number of global studies conducted on GURTs generally, and with particular reference to smallholder farmers, indigenous and local communities and farmers', rights may be of direct relevance to ESA.³⁴

These studies indicate that all the impacts are merely speculative, as none of them has been proven. In brief, despite the lack of reliable scientific data, it is clear that GURTs could have numerous positive and negative impacts. One might, therefore, go along with the US in suggesting that given the novel challenges that GURTs pose, there is need for 'careful, sound, scientific, case-by-case assessment of these technologies' risks and benefits.'³⁵ Yet, it might be important to be generous to critics of GURTs. This is because, although GURTs may elicit overstated concern for their potential negative impacts, this imbalanced view and speculation might actually spur more rigorous research and development.

Some of the potential benefits associated with GURTS include increasing the amount of research and development efforts devoted to "value-added crops", improving the ability to reduce unintended gene flow from transgenic crop varieties to non-transgenic varieties and wild relatives of crops, and contributing important new basic knowledge of plant genomes and reproductive biology overall.³⁶V-GURTs may indirectly contribute to the protection of traditional knowledge and varieties in specific conditions by limiting gene flow where they are used with full and informed prior consent and under the capacity of smallholder farmers and indigenous and local communities.³⁷For innovators, GURTs present an opportunity to protect innovations through technology where legal measures in the form of IPRs offer inadequate protection.

Many of the ESA countries have their economies anchored in agriculture. The majority of the farmers are subsistence farmers. The impacts of GURTs have, therefore, to be seen within the context of smallholder farmers. The prediction is that GURTs will replicate the experiences in hybrid-based agriculture where there will be increased investment by private seed companies.

34 The ad hoc Technical Expert Group Meeting, the Potential Impacts of Genetic Use Restriction Technologies on Smallholder Farmers, Indigenous and Local Communities and Farmers' Rights (UNEP/CBD/SBSTTA/9/INF/6– UNEP/CBD/WG8J/3/INF/2, 29 September 2003).

35 US Comments on CGRFA 9/02/17 Annex, 'Potential Impacts of GURTs on Agricultural Production Systems: Technical Study.'

36 US Comments on CGRFA 9/02/17 Annex.

37 Annex 1, UNEP/CBD/SBSTTA/9/INF/6–UNEP/CBD/WG8J/3/INF/2, 29 September 2003.

Conversely, there will be reduced public expenditures in agriculture R&D.³⁸ Given that IPRs are private monopoly rights, it is likely that they will provide incentives to private actors to invest in GURTs as an additional protection for their innovations.

Over and above all these is the fact that the level of biotechnology development in ESA countries is low. Only a handful of countries are working on genetic modification technologies.³⁹ Similarly, many of the countries have not developed IPP regimes to cover biotechnology innovations. Consequently, it remains to be seen whether these countries will utilise GURTs to protect their innovations or to what extent GURTs will impact access to seeds by farmers in the region.

A. ESA Approach to IPP

Many ESA countries are members of the WTO and have also signed and ratified the CBD. To that extent, they are bound to domesticate TRIPS' IPP provisions. Theoretically, they would grant IPP for GURTs, since patents are available for all technologies. Article 27.1 of the TRIPS Agreement stipulates that "patents shall be available for any inventions, whether products or processes, in all fields of technology" and the patents shall be available, and patent rights enjoyable, without discrimination as to the field of technology. This provision expressly implies that patents may be available in the biotechnology field. Further, Article 27.3 stipulates that members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. This provision further consolidates the position with regard to granting of IPRs in the field of biotechnology, particularly as it relates to plant varieties.

First, under the TRIPS Agreement, the subject matter of protection is left to the discretion of national states and, thus, the scope of protection of products and processes of new technologies is uncertain. Second, different countries exclude different subject matter from patentability and, thus, unification and harmonization of patent laws is a remote goal. The absence of criteria for patentability is favourable because each country, with distinctive public interests shaped by its level of economic development, is able to pattern its national patent laws to correspond to its development goals. This enables developing countries to use infant industry arguments to protect certain sectors from competition or limit the application of the general patent system in certain fields such as pharmaceutical or food industries.⁴⁰ Unfortunately, most African countries have not availed themselves of the flexibility allowed to them through TRIPS. The International Union for the Protection of New Varieties of Plants (UPOV) encourages the adoption of *sui generis* mechanisms for protecting new plant varieties.

38 T Goeschl & T Swanson, 'The Impact of Genetic Use Restriction Technologies on Developing Countries: A Forecast,' in RE Evenson *et. al* (eds), *Economic and Social Issues in Agricultural Biotechnology* (CABI Publishing, Oxon & New York, 2002) 93.

39 These include South Africa, Kenya and Zimbabwe.

40 This would involve extending protection to products and processes that are simple, adaptive and appropriate to local conditions. It would also allow limitation of patentability to local products rather than granting protection to imports as well thereby permitting imitation processes and products to thrive and assist in the development of these countries.

The duration of patents should also be considered to be in line with the development concerns of the country. A shorter period may be conducive to development as the patented product or process quickly passes into public domain allowing others to use it.

It creates its own system that requires that a plant variety be new, distinct, homogenous or uniform and stable in order to be eligible for protection.

There are four versions of UPOV.⁴¹ The 1991 UPOV version restricts the plant breeder's and farmer's exemption by extending PBRs beyond the reproductive material to the harvested material. This form of UPOV entered into force in 1998 and is currently the only available UPOV option for new membership. Countries, such as Kenya and South Africa, have joined UPOV 1978 in a bid to provide protection for plant varieties. This preempts opportunities for coming up with locally designed *sui generis* regimes for protecting plant varieties. *Sui generis* regimes provide an opportunity for defining national agenda and could provide a way of dealing with GURTs as a national development agenda item.

At the regional level, the only effort at defining a regime concerning biological resources is the model law on community rights on access to biological resources developed in the context of the Organisation of African States (OAU). It generally recognises the need to protect the rights of local communities over biological resources and their knowledge, innovations and practices. This implies, at a minimum, recognition in perpetuity of the fact that local communities are creators, users and custodians of their biological resources and knowledge.

The model law accepts the principle that traditional ways of use or exchange of biological resources and knowledge between local communities will not be affected by the law put in place and also recognises the right of local communities to restrict access to their resources and knowledge. It further affirms local communities' inalienable right to keep, use, exchange or share their biological resources that sustain their livelihood systems. Some countries, such as Namibia, Ethiopia and Uganda, are in the process of domesticating some of the provisions of the Model Law.

The need to protect the rights of communities is of great concern in ESA countries. Articles 8 (j) and 10(c) of the Convention on Biological Diversity and Article 9 of the International Treaty on Plant Genetic Resources call for the recognition of these rights. The environment policy of Ethiopia, adopted in April 1997, acknowledges community intellectual property rights and decrees the need to create a system for the protection of community intellectual property rights'. The concept of community intellectual property rights is a new concept. It is very difficult to define the subject matter of protection and who the holders of such a right are and how the rights will be exercised and enforced. These are the issues that African model legislation for the recognition and protection of local communities, farmers and breeders seeks to address.

B. The Case for *Sui Generis* Regimes as a Counter to Negative Impacts of GURTS

The WTO Agreement on Trade Related aspects of Intellectual Property (TRIPS) provides that Members may exclude from patentability:

plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and

41 The International Union for the Protection of New Varieties of Plants (UPOV) was concluded in Paris in 1961; and revised in Geneva in 1972, 1978 and 1991.

microbiological processes. However, members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.⁴²

Under this Article, countries can provide for the protection of plant varieties by patents and/or by any effective *sui generis* system. There are no parameters for a *sui generis* system and the term 'effective' is not defined. Although this is subject to the general principles of TRIPS and may be ultimately determined by WTO provisions especially those relating to dispute resolution, TRIPS leaves wide latitude for interpretation. For that reason, each country can pattern its national laws to correspond to its particular circumstances and aspirations. One way of countering GURTs would be the protection and enforcement of community rights, farmers' and breeders' rights through a *sui generis* system. Such can be tailored to require limitations on protection of GURTs. GURTs, as IPRs, are essentially monopoly rights. Recognizing community rights which are outside the purview of IPP is a way of countering GURTs.

1. Community Rights

One of the main concerns regarding community rights is determining what can be protected and the strength of the protection. Article 8(j) of CBD calls for the protection of knowledge, innovations and practices of indigenous communities. In this context, a *sui generis* system of legislation would be one that would recognize the unique status of local communities and their contribution to the conservation of biodiversity, sustainable use of genetic resources, and fair and equitable benefit-sharing arising from its use.⁴³ GURTs, as a form of *technological control*, are unlikely to provide the balance of societal and individual benefits that even mainstream IPRs seek to achieve. GURTs do not avail new traits and varieties for further breeding that line patents and breeders' rights do.⁴⁴

In most African customary societies, there are entities with the capacity of legal persons. These entities could receive recognition in national legislation and be vested with rights so as to keep away potential GURTs that can impinge on such rights. The nature of these groups is very well captured in the following statement on land tenure system:

Access has always been specific to function, for example, cultivation or grazing. Thus, in any given community a number of persons could each hold a right, or bundle of rights, expressing a specific range of functions. In a typical case, therefore, a village could claim grazing rights over a parcel of land subject to the hunting rights of another, the transit rights of a third and the cultivation rights of a fourth. Each one of these categories carries with it varying degrees of levels of social organization.

42 Article 27(3b).

43 P Cullet, *Intellectual Property Protection & Sustainable Development* (New Delhi, India, Lexis Nexis Butterworths, 2005).

44 Annex 1, UNEP/CBD/SBSTTA/9/INF/6-UNEP/CBD/WG8J/3/INF/2, 29 September 2003.

For example, while cultivation rights were generally allocated and controlled at the extended family level, grazing rights was a matter of much wider segment. The *raison d'être* of control was to guarantee these rights and to allocate them among other members of community should this be necessary.⁴⁵

Community proprietary rights are in accord with TRIPs⁴⁶ and the OAU Model Law on Community Rights.⁴⁷ The main risk in community rights is that because the property is owned by every individual member of the group, there is little incentive to conserve as compared to individual property.

In reference to what might constitute an effective *sui generis* regime, the following are important considerations. The relevant legislation should be one that would provide mechanisms for protecting new plant varieties. Further, and more importantly, that protection need only be real and not necessarily the strongest possible. However, to be effective, it must provide for the effective enforcement of IPRs, for example, through a transparent judicial procedure and border control measures. While it is possible to enact a *sui generis* law for community rights and for plant varieties that takes into account farmers' rights, it is hard to see how certain regional regulatory models are, nonetheless, TRIPs compliant.⁴⁸ Nevertheless, to some experts, the major objectives of a *sui generis* system should be conservation of biodiversity and sustainable use of genetic resources.⁴⁹

Toward this end, the regime must seek alternative mechanisms of protection of property rights of local communities. For instance, the regime should be a form of property rights substantively different from any existing systems, such as UPOV or patents,⁵⁰ a non-monopoly right, have little emphasis on commercialization, and be "effective" in the sense that its definition of property rights caters for all concerned parties and it is in harmony with other legal instruments.⁵¹

45 H.W.O Okoth-Ogendo, 'Land Tenure and Transformation of Peasant Economies in Kenya' (Paper presented at the International Women's Year Tribune's Panel on the Family, Mexico City, Mexico)153, quoted in Kiriro, A. & Juma, C. (eds.), *Gaining Ground: Institutional Innovations in Land-use Management in Kenya* (Acts Press, Nairobi,1991) 43-44.

46 TRIPs does not prohibit the development of additional protection systems or subject matter. Article 8 of TRIPs allows measures to be taken to protect public health and nutrition; and to promote the public interest in sectors of vital importance to their socio-economic and technological development. The cumulative effect of this is to entitle Member countries to enact a law recognizing community intellectual rights to safeguard their local knowledge systems as well as their informal innovations and thereby protect them from illegal exploitation.

47 OAU African Model Law for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources. Another international initiative to strengthen community rights is the UNESCO/WIPO "Model Provisions for National Laws on the Protection of Expressions of Folklore against Illicit Exploitation and other Prejudicial Actions" UNESCO/WIPO, Paris 1985.

48 For example, OAU Model Law appears to entirely reject any form of patentability of life forms.

49 P Cullet, *Plant Variety Protection in the TRIPs: Towards the Development of Sui Generis Protection Systems* (Paper prepared for the ACTS Regional Workshop on Biotechnology, 1999, Nairobi, September 27-29) 9.

50 However, the Regime for the Protection of Plant Breeders' Rights under Article 27(3) (b) of TRIPs will essentially establish IPRs although in a unique manner.

51 *ibid.* (n 50) 10-12.

2. Breeders' Rights

Granting breeders' rights is another way of countering GURTs. Under UPOV, plant breeder's exemption is allowed. This refers to the right of the breeder to use protected varieties for research. Additionally, farmers' exemption accords farmers the liberty to save harvested seed from protected varieties for replanting. Farmers' ability to store seed for replanting or utilize it for experimental purposes is curtailed under the 1991 UPOV version. However, Member states may allow farmers to save seed for their own use.⁵² Plant variety protection in the form of breeders' rights needs to safeguard this aspect which is totally absent when GURTs are used.

The requirement of uniformity as a condition for grant of plant breeders' rights has been criticised as leading to higher degrees of vulnerability of farmers' rights. Local communities feel that they should be guaranteed rights so as to enable them to breed new varieties that maintain genetic diversity in their communities.⁵³ Most traditional varieties are locked out. If the criterion is made broader, there is the risk of broadening property claims (including for GURTs) and, subsequently, limiting the nature of the right granted.

Further, any "effective" *sui generis* system must clearly define what is protected. Due to the leeway in Article 27.3(b), the term "plant variety" could be defined in various ways. In the interests of protection, compensation and conservation, the traditional PBRs system's criteria (requiring distinctiveness, stability and uniformity) could be abandoned and replaced by the sole criterion of identifiability. Such a system would effectively cover the interests of both local communities and large-scale commercial breeders.

3. Farmers' Rights

This concept was given an international impetus in 1989 when it was recognised by the FAO International Undertaking on Plant Genetic Resources. Farmers' rights have been defined as:

rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity.⁵⁴

It is worth noting that farmers' rights emerged as a mere political concept of the need to curb the growing use and expansion of plant breeders' rights, particularly within the context of UPOV. As such the term was not legally defined.

52 It is instructive to note that although other articles of TRIPs refer to other agreements, Section 5, Article 27 (3b) does not refer to UPOV. It is not clear whether this omission means that UPOV is not an effective *sui generis* system or it was meant to give parties a wider space of designing their regimes.

53 R Acharya, *Intellectual Property, Biotechnology and Trade: The Impact of the Uruguay Round on Biotechnology* (Acts Press, Nairobi 1992) 16.

54 FAO Conference Resolution 5/89, 1989, quoted in SH Bragdon and DR Downes, *Recent Policy Trends and Developments Related to the Conservation, Use and development of genetic resources* (Rome, IPGRI 1998) 27.

Today, there is widespread disagreement on the nature of the rights,⁵⁵ and efforts are being made, at both the international and national levels, to interpret the term as a legal concept.

As a legal term, it would be necessary to define the rights, say, as a form of IPRs. These rights would cover, for example, the products of farmer selection and breeding. As noted above, GURTs may threaten traditional practices, such as seed saving, farmer breeding and unhindered seed exchange. Recognising and protecting farmers' rights is one way of securing these rights against appropriation by owners and developers of GURTs.

VI. STRATEGIC POLICY RESPONSES AND WAY FORWARD

It is worth pointing out that, firstly, GURT is a technology and that no technology is innately good or bad. The utility of any technology depends on the use to which it is put. Secondly, GURT, as a technology, is amenable to IPP. If they satisfy the criteria set out for grant of IPRs, reasons would have to be found for refusing to grant the rights. TRIPS has provisions against discriminating particular kinds of technologies. Consequently, the application of GURTs in ESA is unlikely to be countered through non-recognition of GURTs or IPP for GURTs. The following are some strategic measures that can be used to link GURTs and IPP with sustainable development.

A. Assessment of Benefits, Costs & Risks of GURTs & IPP

It is imperative that ESA countries assess both the impacts of IPP and GURTs on food security, agriculture and the environment in the region. This assessment should be followed by a determination of what measures the countries should take to counter the negative impacts, while building on the potential positive impacts of GURTs. The analysis in Table 1 above on benefits, costs and risks is informative and can form an initial basis for assessment.

B. Alignment with National Development Imperatives

The assessment of benefits, costs and risks should be followed by an alignment of GURTs and IPP with strategic needs, such as food security, sustainable agro biodiversity management and environmental sustainability. It should also include an assessment of the role of seed industry and local farmers in seed management activities and tailor an appropriate regime to motivate all actors within their contexts, given that the motivation of private seed companies may be economic while that of farmers may be both economic and social.

C. Use of Flexibilities Under TRIPS

If IPP is deemed to be a useful tool in this regard, countries should determine the best way to utilise them without flouting obligations under TRIPS. The use of flexibilities under TRIPS is one way of exempting particular technologies from patentability, especially if they are a threat to national security. Framing a food security or environmental

55 P Cullet, Plant Variety Protection in the TRIPS: Towards the Development of Sui Generis Protection Systems (Paper prepared for the ACTS Regional Workshop on Biotechnology, Nairobi, 1999) September 27-29)2.

sustainability argument as a national security concern is one way in which ESA countries can limit negative impacts of GURTs and IPP.

D. Regulation

There should also be regulation of the application of GURTs to ensure that the negative impacts are minimised while the positive ones are harnessed. Mechanisms, such as compulsory licensing, can be used to make GURTs available where this is deemed important for national food security. Where GURTs are likely to lead to reduced public R&D investment, concerted efforts should be made to ensure that there is strategic investment in public sector research to avail R&D results to resource poor farmers.

E. Engagement in Ongoing Debates on GURTS

There is also a window of opportunity availed by the Article 8(j), Working Group, which has been mandated to examine the socio-economic impacts of GURTs.⁵⁶ Countries in ESA should participate effectively in this working group to bring their perspectives to bear on the findings and the actions decided on. Article 8(j) provides:

Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

This provides a context for bringing in the protection of community, breeders and farmers' rights as a counter to negative impacts of GURTs. Indeed, having GURTs addressed under this provision provides a context for linking IPP to technology and exigencies of equity in the sharing of benefits by taking into account the multiplicity of actors involved in the conservation and management of biological resources.

F. Development of a *Sui Generis* Regime

The negative impacts of GURTs and IPP on sustainable development can be countered through the fashioning of an effective *sui generis* regime. The core elements of a *sui generis* national policy and legislation for plant varieties should include:⁵⁷

The recognition and protection of the rights of local communities; additional requirements such as allocating value for cultivation and use (to provide incentives for innovation in the interests of local needs such as food security) and declaration of origin (to help establish whether prior informed consent was obtained) may be set up; recognition and protection of farmers' and community rights without the need for registration; restriction of breeders' rights to exclude harvested crops; limitation of the concept of an essentially

56 Decision VII/16(D), Article 8(j) and Related Provisions, in Report of the Seventh Meeting of the Conference of the Parties to the Convention on Biological Diversity, UN Doc UNEP/CBD/COP/7/21 (2004).

57 Patricia Kameri-Mbote, 'Community, farmers' and Breeders' Rights in Africa: Towards a Legal Framework for *sui generis* Legislation' (2003) University of Nairobi Law Journal, 120.

derived variety; enhancement of farmers' privilege to save seeds; public interest broadly construed must prevail over plant breeders' rights; enhancement of plant breeders' exceptions such as research; provision for compulsory licensing; full consideration of environmental and ethical concerns; and promotion of food and health security.

National law should assist, not only in contributing to the sustainable management of biodiversity, but also in giving and allocating property rights to local innovators as well as to all other actors in the seed and agriculture industry. Accordingly, the following measures are proposed.

1. Community Rights⁵⁸

The community should be defined as a legal entity referring to a group of people having a long standing social organization and include indigenous people and local communities. Such communities should have inalienable rights over its biological resources, innovations, practices, knowledge and technology (including the community's right to use and collectively benefit from those resources). The recognition of the community intellectual rights should not be predicated on registration, but customary laws and practices of communities should be applicable to community rights.

Any access to biological resources belonging to a community should be subject to prior informed consent of the community through an established procedure. Further, the right to use resources should be coupled with the corresponding duty towards the conservation and sustainable use of biological diversity. The existence of concurrent rights in a community a number of persons should be permitted so that each member may hold a right, or bundle of rights, expressing a specific range of functions. Where the community institutions have disintegrated, the rights should be vested in a trustee appointed by the state to hold in trust for concerned communities.

2. Farmers' Rights

Farmers' rights should be expressly recognized and protected as the rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources. Like community rights, these rights must not require prior declaration or registration. The rights would be defined as a form of IPR and would cover the products of farmer selection and breeding, and the traditional resources that contribute to the conservation, development and sustainable use of plant and animal genetic resources. They would include rights to use exchange and market farm-saved seeds, protection of traditional knowledge, benefit-sharing and participation in decision-making at the national level. They must also include the right to information so that they can participate effectively in the decision-making process. Additionally, customary laws and practices of the concerned communities must be applied in the protection of farmers' rights.⁵⁹

58 *ibid.*

59 *ibid.*

3. Breeders' Rights

The core elements of a *sui generis* national policy and legislation on plant varieties should include the recognition and protection of the rights of local communities (such as their prior consent must be sought). There should be no creation of rights in favour of third parties in respect of local varieties, and breeders' rights should allow for farmers' rights to produce and/or sell plants and propagating material of the protected variety on a non-commercial basis. Additional requirements, such as value for cultivation and use (to provide incentives for innovations in the interests of local needs such as food security) and declaration of origin (to help establish whether prior informed consent was obtained), may also be instituted.

Identifiability and distinctness of the new variety should be the only criteria of eligibility for recognition and protection. The requirements of uniformity and stability could be applied in a very flexible manner. This is in the interests of protection, compensation and conservation. Such a system would effectively cover the interests of both local communities and large-scale commercial breeders. However, the plant grouping may still have to be distinct. Further, breeders' rights to exclude harvested crops should be restricted and limits placed on the concept of 'essentially derived variety'. Provision should be made for compulsory licensing or limitation on the number or type of varieties in the public interest. Public interest should be broadly construed to prevail over plant breeders' rights, but ensure compensation and due process of the law through provisions for the effective enforcement of IPRs, for example through a transparent judicial procedure. Further, the duration of plant variety protection for commercial breeders should, as much as possible, conform to the socio-economic context and circumstances of each country. Full consideration of environmental and ethical concerns should be made by, for instance, excluding protection of certain plant varieties in order to protect plant life or the environment, prohibiting the patenting of plants, animals and traditional knowledge, including bio-safety provisions, such as the ban on the protection of varieties injurious to biodiversity, and promoting food and health security.

IV. BENEFIT-SHARING

Benefit-sharing needs definition in key areas. These include the mechanisms of benefit-sharing,⁶⁰ who should receive benefits, and what constitutes a benefit. Benefits can be a form of compensation, reward or recognition. Benefits may include royalties, lump sum fees, technology transfer and training, business ventures and development assistance, especially in the context of community rights.⁶¹

Fair and equitable sharing of benefits should also be defined. Prior informed consent and declaration of origin are critical instruments for the implementation of benefit-sharing mechanisms, and could also be used as additional protection requirements. One option is to place the resources in trust with the government. Concerned groups could then make claims to the government. Another option is to create community funds or trusts, into which royalties could be channeled. Establishing registers would go a long

60 *ibid.*; The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, 29 October 2010, Nagoya Japan.

61 *ibid.*

way towards facilitating benefit-sharing mechanisms. Alternatively, community group representatives could be registered and used as custodians of these resources.⁶²

Specific descriptions should be provided of the manner in which benefit-sharing arrangements should be negotiated. Fair and equitable sharing of benefits should cater for the coffers of government, private and public sector institutions, and local communities.

Legal guarantees should include biodiversity collecting regulations. The critical elements of such legislation should include user fees, where appropriate, and provisions for the equitable sharing of benefits.⁶³

Contractual agreements should be developed for access to biological resources. In the context of joint research and development, technology transfer could be used as a form of benefit-sharing. Access and sharing of benefits should depend on various factors, such as the nature of the objective (such as commerce or education/research). Commercial research agreements could also be more rigorous in pursuit of benefit-sharing.

H. Institutional and Administrative Frameworks

Sui generis policies and legislation should provide for the establishment or designation of appropriate institutions for their effective implementation. These institutions could include a national institute or other authority and a national trust fund for distribution of benefits. A judicial or administrative enforcement structure should be set up. Most countries' environment management authorities have formulated draft regulations on the national environment. These regulations contain the recognition and appreciation of farmers' and community rights and traditional knowledge systems. The authorities are mandated to promulgate regulations on access to genetic resources, including guidelines on benefit-sharing.⁶⁴

National policy and legislation can go a long way towards achieving the objectives of conservation, development and equitable benefit-sharing. However, legislation alone may not be enough. There is also need to enhance capacity building, in terms of research and training, as well as institutional, legal, commercial, technological, informational and human capacity.⁶⁵

The above are some of the institutional and technical matters of particular concern to developing countries. Community and farmers' rights must be recognized at the outset. Only then can different interests be balanced with the need for active participation of all players. Countries may need to strengthen regional approaches to benefit from stronger negotiating positions. The East African Community (EAC) and the South African Development Community (SADC) should provide the context for cooperation in areas of food security and natural resources.⁶⁶

62 *ibid.*

63 *ibid.*

64 *ibid.*

65 *ibid.*

66 *ibid.*