

Some Thoughts on the Benefits and Costs of the Regulatory Framework on Access to Genetic Resources and Benefit Sharing in Ethiopia

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Introduction

Historically, genetic resources (GRs) were considered the "common heritage of mankind" and were freely exchanged among countries globally. States had always allowed access to GRs found within their territory and permitted their export for the purpose of scientific research, plant breeding or conservation, free of charge.

The advance made in molecular biology and genetic engineering by developed countries in the late 70s and 80s enabled them to manipulate genetic resources, mainly accessed from biodiversity rich developing countries, to develop new products of commercial value and the protection of genetic resources through intellectual property rights (IPRs). The protection of GRs by IPRs gave them economic value with commercial benefits accruing to industries in developed countries with no flow of benefits to developing countries which are the major suppliers of GRs .

This situation led developing countries to question the fairness of maintaining the traditional system of free access to GRs in the face of private property claims on such resources through IPRs, a practice which they considered contrary to the principle of the "common heritage of mankind". Developing countries began to voice their concerns for the need to regulate access to GRs at the international level and the share in the benefits derived from accessing their GRs by the industrialized North. This concern provided one of the main impetus to the genesis of the negotiations that culminated in the adoption of the Convention on Biological Diversity (CBD).³²⁰ Ethiopia has put in place a regulatory regime on access to genetic resources and benefit sharing (ABS) following the basic tenets of the CBD and it has gained some experience in ABS agreements.

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³²⁰ The Convention on Biological Diversity was adopted at Rio in 1992 and came into force in 1993, UN Doc. UNEP/Bio.Div/N7-INC S/4.

The basic objective of this article is to examine whether or not the current ABS law of Ethiopia can facilitate more open access to genetic resources for research and innovation and realize the intended benefits, both monetary and non-monetary. Within the ambit of this general objective, the article seeks to address the following specific questions:

1. How are decisions made on access requests?
2. What are the roles of the communities and the state in the ABS process?
3. How to use access to GRs for poverty alleviation and economic development in the country?
4. What are the likely benefits and costs of the regulatory regime?
5. What lessons are to be learnt from the ABS experience of the country?

The article will first give some background to ABS with the view of setting the context for the discussion on the above questions in the subsequent sections.

1. Background

The CBD has brought a paradigm shift in GR governance and in many ways it represents a major departure in international environmental law in general, and GRs regulation in particular. The CBD is the first binding multilateral regime to affirm the principle of sovereignty of states over their GRs, which contrasts with the traditional understanding that GRs were the 'common heritage of mankind' and should thus be accessed freely.³²¹

States are sovereign over their GRs in the sense that the "[a]uthority to determine access to the resources rests with national governments and subject to national legislation."³²² Accordingly, "[a]ccess to genetic resources shall be subject to the prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party."³²³ The CBD further states that access, where granted, shall be on mutually agreed terms.³²⁴ National governments thus exercise sovereignty over their GRs by regulating access to the resources and granting access based on prior informed consent (PIC).

³²¹ Article 1 of the *International Undertaking on Plant Genetic Resources* (Resolution 8/23, twenty-second Session of the FAO Conference, Rome, 1983), unequivocally states that plant GRs were the 'common heritage of mankind.'

³²² CBD, Article 15.1.

³²³ *Ibid.*

³²⁴ *Ibid.* Article 15.4.

While the CBD unequivocally affirms the sovereignty of states over their GRs, it also states that conservation of biodiversity is a 'common concern of mankind.'³²⁵ In fact, the whole fabric of the CBD is underpinned by the interaction between the principle of states' sovereignty over their GRs and the idea that biodiversity in general is a 'common concern of mankind.' While unequivocally affirming the sovereignty of states over their GRs, the CBD has also tried to tame this principle by encouraging Parties to refrain from imposing unnecessary restrictions on access to the resources.³²⁶ It does not, however, provide some of the restrictions which may be considered "unnecessary". It appears that this is something left to the determination of national laws. Naturally, the CBD's principle of states' sovereignty over their GRs has attracted more attention than its call for a facilitated access to the resources. Indeed, compared to the situation in the pre-CBD era where GRs were freely moving across regions and countries as 'the common heritage of mankind', the CBD may not take credit for facilitating access to GRs. It appears that the main concern of the parties to the CBD was the hitherto uncompensated commercial use of GRs by western companies without there being benefit sharing and their interest was more in controlling access rather than in promoting it.

The issue of access to GRs is intrinsically tied to 'benefit sharing', another important principle introduced by the CBD. In relation to that, the CBD provides that parties:

[s]hall take legislative, administrative or policy measures... with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.³²⁷

While the CBD leaves the specific arrangement of benefit sharing to the parties concerned based on mutually agreed terms, it also provides some guidance as to what is to be shared and how it is to be shared. In relation to the former, the CBD requires share of the results of research and development and the benefits arising from the commercial or other

³²⁵ *Ibid.* Third paragraph of the preamble.

³²⁶ *Ibid.* Article 15.2.

³²⁷ *Ibid.*, Article 15.7.

utilization of GRs. Though the commercial exploitation of GRs without benefit sharing had been the main concern in the pre-CBD era, the Convention requires benefit sharing not only from the commercial use but also other uses of GRs. In relation to how benefits are to be shared, the CBD simply states that the benefits should be "fair and equitable" without providing any guidance on what these terms mean. Once again, the determination of this issue is also left to national governments. What the foregoing show is that the CBD is a framework agreement providing only general principles, leaving the determination of several important issues to national governments.

In relation to intellectual property rights (IPRs) the CBD states:

The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate 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.³²⁸

Similarly, the CBD makes a direct reference to IPRs in the context of access to and transfer of technology. Accordingly, Parties are required to transfer and/or facilitate access and transfer of technologies to other parties under fair and most favorable terms including on concessional and preferential terms - technologies that are relevant to the conservation and sustainable use of biological diversity.³²⁹ For technologies covered by IPRs, the terms must be 'consistent with the adequate and effective protection of intellectual property rights and in accordance with international law.' Furthermore, the CBD provides that its provisions "[s]hall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity."³³⁰ The relationship between IP rights and ABS has not thus been clearly articulated by the CBD. As a result, IPR issues relating to ABS have been discussed at the various meetings of the Conference of the Parties (COP)³³¹ to the CBD. More importantly, in 2002, at its sixth meeting, the

³²⁸ *Ibid*, Article 16.5.

³²⁹ *Ibid*, Articles 16.1 and 16.2.

³³⁰ *Ibid*, Art. 22.1.

³³¹ The COP is the governing body of the CBD and takes decisions on the implementation of the different provisions of the Convention. The COP holds

COP adopted the Bonn Guidelines which provide some guidance on ABS including IPRs.³³² Nonetheless, despite the different efforts at the CBD to examine the relationship between IPRs and ABS, no conclusion has yet been reached on the impact of IPRs on ABS.³³³ It is to be noted, however, that the whole philosophy of ABS has been built on the assumption that GRs would be accessed and commercialized where IPRs could play an important role towards its achievement.

The synergy between IPRs and ABS could be viewed from three different perspectives. First, an ABS law may prohibit IPRs or certain kinds of IPRs on the accessed resources. For example, the law could prohibit patents on some of the GRs accessed. Second, there could be a provision in the ABS law requiring PIC of providers before acquiring IPRs on products derived from or processes based on the accessed GRs. Such laws may demand benefit sharing from the IPR holder such as royalties or joint ownership of IPRs. Third, there could be a provision in the ABS law requiring proof of PIC and benefit sharing in relation to IPRs applications involving the GRs (defensive use).

Ethiopia is a party to the CBD and has been an active player in the negotiations for the implementation of the ABS provisions at both the international and national levels. It has also spearheaded the OAU model legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Genetic Resources formally endorsed by the OAU Heads of State in 2000 and recommended

meetings annually and as of May 2006 has held 8 conferences. It is reported that to date the COP has taken 182 decisions on substantive and procedural issues. For details about the COP and its activities so far, see CBD's website: <http://www.biodiv.org/convention/cops.asp> (accessed on 25 May 2009).

³³² CBD COP 6, Decision VI-24 adopted the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization (the Bonn Guidelines); see <http://www.biodiv.org/doc/meetings/cop/cop-6/official/cop-06-06-en.pdf> (accessed on 3 May 2009). The Bonn Guidelines were first introduced by the Swiss Government based on a survey conducted by Swiss Companies in relation to the implementation of the ABS provisions of the CBD. The Guidelines were presented by Swiss officials at COP4, at two Expert Panel meetings on ABS as well as COP5. The Open-Ended Ad Hoc Working group on ABS held in Bonn in October 2001 finalized the Guidelines and they were finally adopted by the COP in April 2002 in The Hague (COP6).

³³³ CBD (2001), "Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, Report on the Role of Intellectual Property Rights in the Implementation of Access and Benefit Sharing Arrangements", UNEP/CBD/WG-ABS/1/4.

for implementation at the national level within the continent.³³⁴ As will be discussed in detail subsequently, Ethiopia issued a law on access to genetic resources and benefit sharing in 2006, primarily in line with its obligations under the CBD but also, it seems, taking into account its obligations under other international agreements such as the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR).³³⁵ The aim of this article is not to discuss in detail the provisions of the latter international agreements but to highlight the provisions related to ABS in such instruments where relevant with appropriate analysis as to their implications on national regulation on access to GRs.

2. Ethiopia's biodiversity and Emergence of Regulation

Ethiopia has historically been considered home to many cultivated crops and an important centre of diversity. It is one of the centers of crop diversity identified by the famous explorer, Nikolai Vavilov on the bases of, among other things, ancient agricultural civilization and the diversity of cultivated species.³³⁶ It has further been noted that:³³⁷

In and of itself Ethiopia could be regarded as a Vavilov Centre. Its fantastic terrain of mountains, valleys and plateaus, combined with a long history of cultivation, make the country one of the most botanically diverse and important points in the globe. Ethiopia is home for major world crops like sorghum and many millets, as well as coffee.... Thousand of years of farming have made the region a secondary centre of diversity of wheat and barely as well.

The country possesses a high genetic diversity in four of the world's widely grown food crops (wheat, barely, sorghum, peas), in three of the world's most important industrial crops (linseed, bean, cotton), in the world's important cash crops (coffee), and food crops of regional and local

³³⁴ Available at <http://www.grain.org/brl/oau-model-law-en.cfm> (accessed 9 June 2009).

³³⁵ The International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in November 2001 by FAO Conference (Resolution 3/2001) and came into force on 29 June, 2004.

³³⁶ Vavilov, NI (1962) Five Contents, State Publishing House of the Geographical Literature, Moscow.

³³⁷ Fowler, C. and P.R. Mooney (1990), *Shattering: Food, Politics and the Loss of Genetic Diversity*, University of Arizona Press, Tuscon, AZ.

importance (teff, finger millet, noug, sesame, enset).³³⁸ The World Conservation Monitoring Centre has designated Ethiopia as a 'Group I Country', a category which includes the 25 most bio-diverse countries in the world based on species richness and endemism.

Different reasons explain the country's richness in diversity. First, the country's geographical position, range of altitude, rainfall pattern, and soil variability has enabled the development of a wide-range of diversity. The topography of the country which ranges from 110 meters below sea level to 4,620 meters above sea level has created a conducive environment for the development of a wide variety of flora and fauna. Second, the long practice of selection and adaptation by Ethiopian farmers of wild varieties to different weather and ecological conditions has also assisted in the creation of a wide-range of genetic diversity.³³⁹ Third, Ethiopia is also a socio-culturally diverse nation with about 80 ethnic groups each with its own culture, tradition and innovation practices. The different traditional farming and innovation practices have also contributed to the country's richness in diversity.³⁴⁰

The Ethiopian farming communities, which constitute about 85 percent of the population, highly depend on biodiversity to meet their basic needs such as food, shelter, fuel, medicine, and transportation. For example, more than 80 percent of Ethiopians get their healthcare services from traditional healers who completely rely on biodiversity and more than 95 percent of traditional medicine is of plant origin.³⁴¹

The issue of regulations on access to GRs in Ethiopia is a relatively new development, as it is in other developing countries. In consonant with the understanding that GRs were the 'common heritage of mankind', the GRs of the country were freely accessed, taken out of the country and used for

³³⁸ See the Second Country Report of Ethiopia to the CBD, available at <http://www.biodiv.org/doc/world/et/et-nr-02-en.pdf> (accessed on 2 June 2009).

³³⁹ Fowler, C. and P.R. Mooney (1990), *Shattering: Food, Politics and the Loss of Genetic Diversity*, University of Arizona Press, Tuscon, AZ.

³⁴⁰ Engles, J.M. and Hawks, J.G., *The Ethiopian Gene Center and its Genetic Diversity*, in Engles, J.M. and Hawks, J.G. & M. Worede (eds) (1991) *Plant Genetic Resources of Ethiopia*, Cambridge University Press, New York.

³⁴¹ Demissiew, S. et al (2005), 'Biological Resources of Ethiopia and Status of Global Utilization and Intellectual Property Claims' paper presented at the Institute of Biodiversity Conservation and Research, Addis Ababa, 21 November 2005.

different purposes. Ethiopia has contributed significantly to the collection of germplasm at the Consultative Group on International Agricultural Research (CGIAR) system. Out of the total accession the system holds worldwide, 22,135 (accounting for 3.3 percent of the total) were collected from Ethiopia- the largest from Africa.³⁴²

Nevertheless, there are no comprehensive studies on the GRs that have been taken out of the country and held in *ex situ* collections or exploited for commercial purposes. As there were no regulations in place until recently, it is not possible to get any record on the extent of access and use of the GRs of the country. There is only patchy information which does not show the full picture and the few known cases suggest that the GRs of the country were freely accessed, taken out and exploited commercially without the country getting any benefits.³⁴³ Some of the resources were even protected by IPRs on the understanding that they were modified from their original state.³⁴⁴

The issue of access to GRs and benefit sharing has become an important regulatory agenda in Ethiopia with the shift in global GR governance following the coming into force of the CBD. Legislation on access to GRs was envisaged by the 1997 Environmental Policy of Ethiopia (EPA). Moreover, the 1998 National Policy on Biodiversity Conservation and Research has broadly outlined the issues of access to GRs and benefit sharing. In terms of legislation, a general framework on access to GRs was provided for by the *Institute of Biodiversity Conservation and Research*

³⁴² Information from the System-Wide Information Network for Genetic Resources (SINGER), available at <http://singer.grinfo.net/overview/origcty.php?reqid=1157016268.0992> (accessed on 23 April 2009).

³⁴³ A study by the Rural Advancement Fund International (RAFI), now Action Group on Erosion, Technology and Concentration (ETC Group), shows that Ethiopian barley and sorghum varieties were used in the US generating \$150 million and \$12 million a year respectively. Another case identified by the study is *Endod*, known as the African soapberry plant and which has been used by the Ethiopian Communities as a laundry soap and Shampoo. The University of Toledo has applied for a patent on the use of *Endod* to control zebra mussels which is expected to generate millions of dollars. See RAFI (1994).

³⁴⁴ For example a variety of *Teff*, a crop which originated from and widely grown in Ethiopia mainly to make, *Injera*, a flat bread staple food in Ethiopia was taken from Ethiopia and protected by a plant variety right in the US by the *Teff Company* (Plant breeder's certificate No. 090033) without there being any benefit sharing either to the country of the communities that have been preserving and improving the *Teff* GRs.

Establishment Proclamation (hereinafter IBCR Establishment Proclamation).³⁴⁵

The IBCR Establishment Proclamation states that any person who wants to collect, dispatch, import or export any biological specimen from or to the country should first obtain a permission from the Institute of Biodiversity Conservation and Research (IBCR).³⁴⁶ Engaging in any of the above activities without permission from the IBCR became a criminal offence punishable with imprisonment ranging from five to ten years and fine from 15,000 to 20,000 Birr.³⁴⁷ However, despite its use as a regulatory regime on access to GRs the IBCR Establishment Proclamation does not contain the main elements of an ABS regulation as envisaged by the CBD. The enactment of a comprehensive regulatory framework on ABS had to wait until January 2006, when the country enacted the *Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation*³⁴⁸ (the ABS Law).

3. Overview of the Current ABS Regulatory Regime

3.1. General

The objective of the ABS Law is “[t]o ensure that the country and its communities obtain fair and equitable share from benefits arising from the utilization of the resources so as to promote the conservation and sustainable utilization of the country’s biodiversity.”³⁴⁹ The ABS Law, thus, aims to achieve the same objective of the CBD through the use of fair and equitable share of the benefits from the use of the GRs of the country as the main instrument. This clearly suggests that the law is informed by the provisions of the CBD and this has actually been stated in the preamble. A statement in the preamble also suggests that the ABS Law was informed by the African Model Law as well. Through the ABS Law, the country is, thus, implementing its rights and obligations under the CBD and adapting the African Model Law to its own needs and circumstances. Nonetheless, Article 15.2 of the ABS Law states that access to GRs covered by

³⁴⁵ The Institute of Biodiversity Conservation and Research Establishment Proclamation No. 120/ 1998.

³⁴⁶ Ibid, Article 12.

³⁴⁷ Ibid, Article 13. Birr is the local Ethiopian currency. The exchange rate of 1US\$ against a Birr is roughly about 12.50 Birr.

³⁴⁸ The Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation, Proclamation No. 482/2006.

³⁴⁹ Ibid, Article 3.

international treaties to which the country is a party would be regulated in accordance with the rules in those treaties, implying that access to GRs covered by the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR), a treaty ratified by the country would be regulated in accordance with the provisions of the latter. The details on access to GRs covered under the Multilateral System, as envisaged by the ITPGR, are to be determined by regulations.

The ABS Law applies to GRs both *in situ* and *ex situ* conditions. The law does not make distinction between the GRs of the country found *in situ* or *ex situ* in the country or outside. Nor does it make any exception to GRs held in *ex situ* in the country but originated from other countries. The ABS Law has also made no distinction between GRs accessed before and after the CBD came into force.

3.2. Access Conditions and Procedures

In Ethiopia, access to GRs can only be made with a written permit to be issued by the Institute (the Institute of Biodiversity Research), a Federal institution, based on the principle of PIC.³⁵⁰ However, the ABS Law has made a few exceptions to the rule. One such exception is the customary use and exchange of GRs by and among the Ethiopian communities which is excluded from the ABS Law (Article 4.2(a)). The second exception is that national public research and higher learning institutions as well as intergovernmental institutions based in the country may get a special access permit for facilitated access without the need to strictly follow the standard access procedure, provided that the purpose is only for development and academic research and that such activities are undertaken within the country.³⁵¹ The ABS Law has no rules in relation to the conditions and the minimum obligations to be assumed by the applicant for such facilitated access. It appears that the determination of such issues is left to the exclusive discretion of the Institute.

Access to GRs by foreigners is subject to additional requirements. First, foreign applicants should provide a letter of assurance from 'the competent authority' of his/her national state or domicile assuming the obligation to uphold or enforce the access obligations.³⁵² It is not clear who would be 'the competent authority' or how this authority enforces the obligations

³⁵⁰ Ibid, Article 11 (1).

³⁵¹ ABS Law, Article 15.1.

³⁵² Ibid, Article 12.4.

assumed by the applicant. In the ABS Agreements the country has concluded (to be discussed later) representatives from the embassies of the countries of origin of the companies (applicants) countersigned the agreements but only as witnesses. Second, the collection of GRs by foreigners should be accompanied by the personnel of the Institute or the relevant institution designated by the Institute.³⁵³

As in the case of the CBD and the African Model Law, the first important condition for access to GRs under the ABS Law is PIC. As noted, access to GRs in Ethiopia requires the PIC of the Institute.³⁵⁴ Nevertheless, even if the term 'prior informed consent' is defined under Article 2.11³⁵⁵ of the ABS Law, the definition does not clearly show what sort of information should be provided by the applicant in order to satisfy the PIC requirement. It appears that the information required for PIC purpose is to be determined by regulations. The PIC of the communities is not required under the ABS Law. Communities may only request the Institute to restrict or withdraw its PIC when they think that the access would likely be detrimental to their socio-economic life or their natural or cultural heritage, but the Institute has no obligation to accept their request.³⁵⁶

The second important condition for access to GRs in Ethiopia is benefit sharing. The ABS Law states as one pre-condition for access, that the state and the concerned local communities shall obtain fair and equitable share of the benefits from the utilization of GRs accessed (Article 12.3) and provides a non-exhaustive list of benefits which may possibly be shared.³⁵⁷ The ABS Law entitles the state and local communities to share benefits arising out of the exploitation of GRs.³⁵⁸ But a closer look at this provision suggests that local communities do not actually have the right to participate

³⁵³ Ibid, Article 12.5.

³⁵⁴ Ibid, Articles 12.1 and 12.2.

³⁵⁵ "Prior informed consent" is defined as "the consent given by the state and the concerned local community based on an access application containing a complete and accurate access information to a person seeking to access a specified genetic resource or community knowledge."

³⁵⁶ The ABS Law, Article 7.d.

³⁵⁷ Including license fee, upfront payment, milestone payment, royalty, research funding, joint ownership of IPRs, employment opportunity, participation of Ethiopians in the research, priority to supply raw materials of GRs for producing products there from, access to products and technologies developed through use of the GRs, training at both institutional and local levels, provision of equipment, infrastructure and technology support (Article 19).

³⁵⁸ The ABS Law, Article 9.

and negotiate benefits from the use of "their" GRs; rather, the government negotiates and determines the benefits and they are entitled to a share of the benefits that accrue to the state. In relation to financial benefits, communities are entitled to claim 50 percent of such benefits accrued to the state.³⁵⁹ This means that the government and the applicant determine the parameters of benefit sharing, the communities having no influence on the determination of the benefit from 'their resources.' They do not have any role in setting the terms of the agreement or the amount of benefits. They do not, for example, have the right to say that the benefit is unfair or inequitable.

No mechanism has been designed to ensure that the communities would get even their share of the benefits in practice. For example, no single community was identified in the ABS Agreement discussed below in this paper for the purpose of benefit sharing.

The ABS Law further states that the money (share of the communities) shall be put to the 'common advantage of the concerned local communities' the implementation of which is to be determined by regulations to be issued by the state. It means that the government will determine the manner of use of the share of the communities. The ABS agreements did not clarify this issue either. They simply envisage a fund which shall be used for improving the living conditions of 'the local farming communities'. As noted, ensuring benefit sharing to local communities with their informed and full participation is the main objective of the ABS Law, but whether this objective has been translated into its provisions is questionable. Although the law places a great deal of importance on communities and emphasizes their participation and decision making, that has remained largely at the level of rhetoric and in fact the law accords all the decision making power to the government.

³⁵⁹ Ibid, Article 9.2.

CONDITION OF ACCESS

11. Prohibition

- 1/ Without prejudice to the provisions of sub-article 2(a) of Article 4 of this Proclamation, no person shall access genetic resources or community knowledge unless he is in possession of an access permit granted by the Institute.
- 2/ Unless explicitly expressed, the granting of permit to access genetic resources shall not be construed to constitute permit to access the community knowledge associated therewith and vice versa.
- 3/ Without prejudice to the provisions of sub-article 2(b) of Article 4 of this Proclamation, no person shall export genetic resources out of the country unless he is in possession of an export permit granted by the Institute.
- 4/ Notwithstanding the provisions of sub-article (1) of this Article, organs of the state which are empowered by law to conserve genetic resources may not be required to obtain access permit from the Institute to collect genetic resource or community knowledge in the discharge of their duties; provided however, that they may not be allowed to transfer the genetic resources or community knowledge to third persons or export same out of the country unless they are given explicit permit by the Institute. When conducting collection of genetic resources and community knowledge, employees of such institutions need to have letters to this effect.

12. Basic Pre-Conditions of Access

- 1/ Access to genetic resources shall be subject to the prior informed consent of the Institute.
- 2/ Access to community knowledge shall be subject to the prior informed consent of the concerned local community.
- 3/ The state and the concerned local community shall obtain fair and equitable share from benefits arising out of the utilization of genetic resources and community knowledge accessed.
- 4/ An access applicant who is a foreigner shall present a letter from

the competent authority of his national state or that of his domicile assuring that it shall uphold and enforce the access obligations the applicant shall have.

- 5/ In cases of access by foreigners, the collection of genetic resources and community knowledge shall be accompanied by the personnel of the Institute or the personnel of the relevant institution to be designated by the Institute.
- 6/ The research using genetic resources accessed shall, unless found impossible, be carried out in Ethiopia and with the participation of Ethiopian nationals designated by the Institute.
- 7/ Where the research on the genetic resources accessed is permitted to be carried out abroad, the institution sponsoring or hosting the research shall give a letter of guarantee assuring the observance of the access obligations by the access applicant and the institution.

3.3. The ABS Law and Intellectual Property Rights

Despite its heavy reliance on the African Model Law, which has unequivocally banned patents on life forms and biological processes in general³⁶⁰, the ABS Law has no provision on the issue of the patentability or otherwise of life forms and biological processes. It could be said that the ABS Law is not the appropriate law to deal with IPRs, but it is within the bound of reason to expect the ABS Law, which after all regulates access to GRs, to provide rules on what should and should not be done with the accessed genetic resources.

The Proclamation Concerning Inventions, Minor Inventions and Industrial Designs³⁶¹ (hereinafter Proclamation on Inventions) excludes from patentability only plant and animal varieties and essentially biological processes for the production of plants and animals.³⁶² This would mean that microorganisms could be patentable subject matter in Ethiopia as they are not specifically excluded from patentability. The position taken by the Proclamation on Inventions is largely compatible with Article 27.3(b) of the TRIPs which allows members to exclude from patentability plants and

³⁶⁰ The African Model Law, Article 9.1.

³⁶¹ Proclamation Concerning Inventions, Minor Inventions and Industrial Designs, Proclamation 123/1995.

³⁶² Ibid, Article 4.

animals which right should logically include plant and animal parts as well. Ethiopia is in the process of accession to the WTO and it appears that the ABS Law has cautiously refrained from adopting the African Model Law approach on patentability of life forms and biological processes thereby avoiding possible conflict with the TRIPs Agreement.

One of the obligations of the access permit holder under the ABS Law is that, "Where he seeks to acquire intellectual property rights over the genetic resource accessed or parts thereof, [s/he must] negotiate new agreement with the Institute based on the relevant Ethiopian Laws."³⁶³ The language used in the ABS Law in relation to IPRs is general and vague. First, the phrase 'intellectual property rights over the accessed genetic resources or parts thereof' seems to imply that IPRs could be claimed on the GRs as they are or on the parts such as the isolated or purified genes from the accessed GR. However, it is difficult to imagine that the law is allowing IPR over the resources as they are. There is no reason for IPR claim on the GRs or parts thereof without there being human innovative intervention.

In view of the fact that monopoly rights through IPRs are increasingly perceived as stifling research and development, particularly in the life sciences, it is difficult to imagine that Ethiopia is providing more extensive IPR protection than what the TRIPs Agreement requires. Unfortunately, the Proclamation on Invention is silent on the possibility or otherwise of the patentability of GRs as they are or their parts. But given the fact that the exclusion specifically refers to plant and animal varieties and that as a matter of interpretation of law an exception should be interpreted narrowly, one may argue that parts of GRs may be a subject of patents as long as they qualify as 'invention' and meet the patentability requirements under the Proclamation on Inventions. However, the protection criteria under the Proclamation on Inventions do not allow IPR protection on the accessed GRs or parts thereof without there being an adequate modification (innovation) made on them.³⁶⁴

While this cautious approach towards IPRs is understandable in the context of avoiding conflicts with other treaties, particularly the TRIPs Agreement,

³⁶³ The ABS Law, Article 17.12.

³⁶⁴ The Proclamation on Inventions requires that what could be patented is an invention and that the invention should satisfy the standard patentability criteria: novelty, inventive step and industrial application (See Articles 2.3 and 3.2, 3.4 and 3.5).

the law should have made the issue of IPRs on the accessed GRs clearer by stating that IPRs may not be claimed on the accessed GRs or their parts as they are or even if isolated or purified and that IPR claims on improvements on the accessed resources or products made from them would be governed by the relevant IPR laws of the country. On the top of the foregoing, the ABS Law requires the access permit holder to recognize the locality from where the GR was accessed as origin in any application for commercial property protection of the product developed thereof such as in applications for an IPR.³⁶⁵

One of the proposals developing countries tabled for discussion in the TRIPs Council, within the context of the review of Article 27.3(b), calls for the amendment of the TRIPs Agreement so as to require patent applicants to: 1) disclose the source/origin of GRs used in an invention and 2) provide proof of prior informed consent of the providers and benefit sharing thereof (the disclosure requirements).³⁶⁶ However, the obligation under the ABS Law is only to 'recognize' as origin the locality from where the GRs were accessed and does not extend to the other elements of the 'disclosure requirements' which are being discussed at the TRIPs Council of the WTO. It is also interesting to note that the ABS Law requires recognition not just of the country but also of the locality wherefrom the GRs were accessed. This requirement is the invention of the Ethiopian regulatory regime.

3.4. Relation with the Plant Variety Protection and the Patent Laws

One of the requirements for the grant of plant breeders' rights (PBRs) as stated in the Proclamation to Provide for Plant Breeders' Right³⁶⁷ (hereinafter the PBR Law) is that the breeder has to prove that he/she has obtained the GRs used to develop the variety in accordance with the

³⁶⁵ Ibid, Article 17.14.

³⁶⁶ See proposals from different Members in the WTO documents from the African Group, IP/C/W/404, IP/C/M/40; Andean Community, IP/C/M/37/Add.1; Brazil, IP/C/W/228, IP/C/M/46, IP/C/M/42, IP/C/M/39, IP/C/M/38, IP/C/M/37/Add.1, IP/C/M/36/Add.1, IP/C/M/33, IP/C/M/32, IP/C/M/29; IP/C/M/28, IP/C/M/27; Brazil and other developing countries, IP/C/W/403, IP/C/W/429/Rev.1, IP/C/W/356; China, IP/C/M/47, IP/C/M/37/Add.1, IP/C/M/36/Add.1; Colombia, IP/C/M/46, IP/C/M/42, IP/C/M/40, IP/C/M/38, IP/C/M/37/Add.1, IP/C/M/36/Add.1; Ecuador, IP/C/M/47, IP/C/M/25; India, IP/C/W/198, IP/C/W/195, IP/C/M/45, IP/C/M/42, IP/C/M/40, IP/C/M/36/Add.1, IP/C/M/30, IP/C/M/24; Indonesia, IP/C/M/49, IP/C/M/47, IP/C/M/36/Add.1; Kenya, IP/C/M/47, IP/C/M/46, IP/C/M/42, IP/C/M/40, IP/C/M/37/Add.1, IP/C/M/36/Add.1, IP/C/M/28; Pakistan, IP/C/M/36/Add.1; Peru, IP/C/M/36/Add.1, IP/C/M/40; Thailand, IP/C/M/42, IP/C/M/25; Venezuela, IP/C/M/40, IP/C/M/36/Add.1, IP/C/M/32; Zimbabwe, IP/C/M/36/Add.1.

³⁶⁷ A Proclamation to Provide for Plant Breeders' Right, Proclamation No.481/2005.

relevant laws on access to GRs.³⁶⁸ Thus, proof of the fact that the GRs were accessed in accordance with the ABS Law is a condition for the grant of the right of a plant breeder.

This obligation needs to be analyzed under different scenarios. To begin with, the PBR applicant may not have accessed and used Ethiopian GRs at all in which case he/she need not prove anything except a mere declaration to that effect. As noted earlier, the requirement, as it stands now, does not apply in cases where the GRs of the country were not used in the development of the new plant variety on which a PBR is claimed.

On the other hand, the PBR applicants might have accessed and used Ethiopian GRs through different ways. First, the resources could have been accessed from within Ethiopia, either from *in situ* or *ex situ* sources. As discussed, access to these resources is dependent upon PIC of the Institute. The PBR Law states that the applicant should prove that he/she has obtained the GRs used to develop the variety in accordance with the relevant laws on access to GRs.³⁶⁹ A person may access the GRs of Ethiopia only if he/she is in possession of a written access permit granted by the Institute³⁷⁰ and it is this access permit that has to be presented as a proof that access was made in accordance with the ABS Law. The applicant is not required to prove that he/she actually obtained the PIC or fulfill benefit sharing obligations because under Article 12 of the ABS Law, PIC and benefits sharing are pre-conditions for the grant of the access permit and possession of the permit implies that the requirements for access were complied with.

Second, some of the GRs of Ethiopia might have been accessed in accordance with a multilateral system established by treaties to which Ethiopia is a party (such as the ITPGR) in which case the applicant should provide a proof to that effect possibly by presenting the material transfer agreement on such resources. As noted, the ABS Law does not have detailed rules on access based on the multilateral system. The specific requirements in such cases are yet to be determined by regulations to be issued under the ABS Law.

³⁶⁸ Ibid, Article 14(3).

³⁶⁹ Ibid.

³⁷⁰ The ABS Law, Article 11.

Third, GRs taken out of Ethiopia through different means and channels and preserved in the different *ex situ* collections might have been used in the development of the plant variety. While the CBD does not deal with GRs accessed before it came into force and there are no international rules governing such resources (except the ITPGR in relation to specific number of varieties), the ABS Law has already claimed sovereignty over such resources and the applicant should arguably present the same proof as those GRs accessed from inside the country. As noted, Ethiopia has contributed significantly to the germplasm collection at the CGIAR and it appears that the ABS Law extends the country's sovereignty over such resources with the exception of the specific GRs included in the Multilateral System of access at the ITPGR. A breeder who has used such resources to develop a plant variety should present the same proof to the effect that access was made in accordance with the ABS Law of the country.

Failure to prove that GRs used in the development of the new plant variety were accessed in accordance with the ABS Law of the country would result in the right being denied.³⁷¹

4. Ethiopia's Experience in ABS Agreements

In 2005, Ethiopia has successfully concluded what may be called the first ABS agreement for a duration of ten years, the *Agreement on Access to, and Benefit Sharing from Teff*³⁷² GRs (the *Teff ABS Agreement*) with the Health and Performance Food International bv., a Dutch Company (the Company).³⁷³

Under the *Teff ABS Agreement*, the Company is entitled to access and use *Teff* GRs specified in Annex 1 for the purpose of developing food and beverage products listed in Annex 3 to the agreement.³⁷⁴ Furthermore, the Company is entitled to develop new *Teff* varieties suitable to its business.

³⁷¹ The PBR Law, Article 22.

³⁷² *Teff* (*Eragrostis teff*) is a small cereal grain, closely resembling millet that is originated from and widely grown and used in Ethiopia to make *injera*, fermented, flat bread that is the most popular staple in the local diet. *Teff* is a major contributor to nutrition in the Ethiopian diet

³⁷³ *Agreement on Access to, and benefit sharing from, Teff Genetic Resources*, concluded between the Institute of Biodiversity Conservation and Research (Provider), the Ethiopian Agricultural Research Organization and Health and Performance Food International bv., (the Company), signed on 5 April 2005.

³⁷⁴ *Ibid*, Sections 4.1 and 4.2.

The Company has in turn agreed to acknowledge the fact that the *Teff* GRs it acquires or will acquire are of Ethiopian origin irrespective of their source.³⁷⁵ The Company has also agreed to share benefits arising from the utilization of the GRs of *Teff* including upfront payment in lump sum, annual royalty of 30 percent of the net profit from sale of seeds of the *Teff* varieties, annual license fee, annual contribution (5 percent of its net profit which should not be less than 20,000 Euro per year) to a fund to be used for improving the living conditions of local communities and for developing *Teff* business in Ethiopia.³⁷⁶

In addition to the financial benefits, the Company has also agreed to share its research results especially the knowledge and technologies it may generate using *Teff* GRs (except when it constitutes undisclosed information) to the Ethiopian public research institutions as well as to involve Ethiopian scientists in its research.³⁷⁷ The *Teff* ABS Agreement was made before the country had put in place its ABS regime. As the Agreement was concluded after the country had already become a party to the CBD, the dearth of specific national ABS regulations did not prevent it from making ABS Agreements. The *Teff* ABS Agreement was concluded following the basic tenets of ABS as encapsulated in the CBD and the Bonn Guidelines.³⁷⁸

More recently, Ethiopia has also concluded its second ABS Agreement, the *Agreement on Access to, and Benefit Sharing from Vernonia* with Vernique Biotech Ltd, a British Company. *Vernonia* (*vernonia galamensis*), a plant regarded for long as weed by Ethiopian farmers, produces an extraordinary oil- a potential source of epoxy compounds currently being produced from petrochemicals.³⁷⁹ It has even been said that the plant has the potential to become 'the industrial soya bean of the 21st century.'³⁸⁰ As the main elements of the two agreements are similar, the discussion in this section focuses on the *Teff* ABS Agreement.

³⁷⁵ Ibid, Section 3.3. Even if there is a dispute between Ethiopia and other countries in relation to the origin or the source of the GRs, the Company has the obligation of recognizing them as originated from Ethiopia even if the source might have been a different country.

³⁷⁶ Ibid, Section 8.

³⁷⁷ Ibid, Sections 8.6 and 8.7.

³⁷⁸ Ibid, Sections 3.6 and 15.

³⁷⁹ The Australian, "Ethiopian 'green chemical' plant could weed out polluting glue", 10 August 2006.

³⁸⁰ Ibid.

Some observations could be made in relation to this agreement. First, as discussed, the Ethiopian ABS Law entitles communities to some rights in relation to ABS. But these community-friendly provisions have not been clearly articulated in the *Teff* ABS Agreement. While the PIC of the communities is not required for the purpose of access to GRs under the ABS Law, no single community was identified in the *Teff* ABS Agreement even for the purpose of benefit sharing. In the agreement the Company (applicant) has agreed to contribute 5 percent of its net profit to a fund which shall be used, among other things, for the purpose of improving the living conditions of 'the local farming communities'.³⁸¹ Given the difficulty in identifying a particular community, it is very likely that this general reference to communities will continue even in future agreements. This represents an important challenge to the implementation of the rights of the communities as envisaged in the CBD as well as in the national laws. Under such circumstances the government would likely continue to be the major or even the only player in ABS regulation in Ethiopia.

Second, as discussed, the provisions of the ABS Law dealing with IPRs are general and vague. On the other hand, the *Teff* ABS Agreement has come up with a clearer provision on IPRs. In the agreement, the issue of IPR was settled as follows: while the Company was prohibited from claiming IPR 'over the genetic resources of *Teff*' or 'any component of the genetic resources', plant variety rights could be obtained over *Teff* varieties to be developed by the company.³⁸² Thus, it clearly provides, unlike the ABS Law, what could be protected by IPRs and what could not be. As said, this makes the ABS transaction transparent and predictable. Similarly, while the ABS Law requires negotiation in the event of IPR claim relating to the accessed GRs, in the *Teff* ABS Agreement the issue of IPRs was determined at the time of the conclusion of the agreement where the Ethiopian Agricultural Research Organization (EARO), a public agricultural research institution, would be the co-owner of any IPRs on plant varieties the company would develop from the accessed *Teff* GRs.³⁸³

The *Teff* ABS Agreement provides that its provisions are to be interpreted in light of the provisions of the CBD and the Bonn Guidelines.³⁸⁴ As noted, the

³⁸¹ The *Teff* ABS Agreement, Section 8.4.

³⁸² *Ibid*, Section 5.

³⁸³ *Ibid*, section 5.2.

³⁸⁴ *Ibid*, Section 15.

CBD is just a framework agreement and does not obviously offer much help in interpreting the specific provisions of the agreement, especially in relation to IPRs. However, the Bonn Guidelines require clear and transparent policy on IPR issues and they are based on the understanding that IPR is the driving force behind benefit sharing.

Under the *Teff* ABS Agreement, it is one of the obligations of the Company to acknowledge, in all its publications and applications for the registration of *Teff* varieties and other IPRs over products derived from the *Teff* GRs that Ethiopia is the country of origin of *Teff*.³⁸⁵ Again the Agreement requires acknowledgment of Ethiopia as origin of the resource unlike the ABS Law that requires recognition of the locality from where the resources were accessed. The requirement in the *Teff* Agreement is to 'acknowledge' and not limited to IPR applications but applies even in case of publications relating to the accessed GRs.

Third, the ABS Agreement clearly shows that most of the monetary benefits are dependent on the profits the companies (the users) make from the commercialization of the products from the accessed GRs. Whether the country will actually get the financial benefits is uncertain. Financial benefits from ABS agreements are unpredictable and any over-expectation in this regard is unwarranted. Needless to say, most of the commercialization of the products derived from the GRs and their IPR protection will take place outside the country, and Ethiopia does not have the capacity to follow up the commercial exploitation of the products or their IPR protection outside its borders.³⁸⁶ To that extent, whatever benefit may accrue depends on the goodwill of the users of the resources, in this particular case, the Company. ABS agreements should rather pay more attention to non-financial benefits such as research capacity building which are more feasible and predictable because they are immediate and do not depend on the companies making profit.

Fourth, one of the major weaknesses of the ABS Agreements is that they fail to create the necessary relationship and synergy with the international agreements dealing with ABS issues to which the country is a party, and

³⁸⁵ Ibid, Section 8.11.

³⁸⁶ The *Teff* ABS Agreement has provided for monitoring and follow-up mechanisms (section 16) but these mechanisms are largely based on the reports to be submitted by the Company. The provider is entitled to review the bookkeeping as well as the relevant administrative details through an independent accountant but how far this would be implemented on a regular basis is not clear.

other relevant laws of the country. The 'applicable laws' specifically stated in the *Teff* ABS Agreement, for example, are the CBD, the ITPGR, the Bonn Guidelines, COP Decisions and the International Convention for the Protection of New Varieties of Plants (UPOV Convention).³⁸⁷ This raises different issues. To begin with, it is not clear why the provisions of the UPOV Convention should at all be applicable even to interpret the Agreement while the country has refrained deliberately from adopting it. This may raise an issue of a constitutional nature as it involves the application of an international treaty not ratified by the parliament. Furthermore, the relevance of the ITPGR whose *modus operandi* is underpinned by a multilateral system of access to a limited number of GRs, as opposed to the ABS Law with its bilateral approach, remains unclear.

5. Critical evaluation of the ABS regulatory regime: Research and Innovation at Risk?

The idea of private ownership of knowledge is alien to the Ethiopian communities where the tradition is sharing, and exchange of information. This is done because it is the only way for their survival. An Ethiopian commentator noted that communities in Ethiopia do not really appreciate the need for regulation of access to GRs as the system they are used to is based on the exchange and open access to genetic material and farmers are always amused to hear that some of their local varieties collected and claimed to be improved to some extent, might get legal protection ensuring exclusive rights to the IP holders.³⁸⁸ Now Ethiopia is confronted with the challenges of how to reconcile the values, traditions and customs of its communities which are basically open and free, with the ever encroaching global economic regulation which is based on privatization of knowledge and information.

At a broad and strategic level, therefore, the ABS law in Ethiopia is a response to this trend and is informed by the North/South debate related to the historical problems associated with flow of GRs and their commercial

³⁸⁷ The *Teff* ABS Agreement, Section 15. The International Convention for the Protection of New Varieties of Plants of December 2, 1961 as revised on November 10, 1972, on October 23 1978 and on March 19, 1991. UPOV is the French acronym for the French name of the UPOV, *L'Union internationale pour la protection des obtentions végétales*.

³⁸⁸ Damena, W., (2003), 'Access to Genetic Resources in Ethiopia', in K. Nandozie et al. (eds), *African Perspectives on Genetic Resources: A handbook of Laws, Policies and Institutions*, Environmental Law Institute, Washington, DC.

exploitation by private entities without compensation. The political and ideological debate surrounding GRs has obviously shaped the law.

Indeed, in view of the current global environment which does not allow free access and sharing of GRs the only option left to countries like Ethiopia is to regulate access and flow of the resources. The issue is not thus whether Ethiopia should regulate access to its GRs; it is rather how to regulate it. The experience so far suggests that a strict state controlled access and benefit sharing regime may not necessarily be the answer. The implications of a stringent regulatory regime on other equally important considerations such as research and development need to be considered carefully.

Ethiopia, which perceives itself as rich in biological diversity, may hope to earn profit or make economic gains from its GRs. Even if the priority of the government is poverty alleviation and all the policies and strategies should ultimately reflect this policy direction, expectations of direct financial benefits to be used for poverty alleviation should not be overstated. There is no evidence that even in the so-called megadiverse countries, where more access to GRs has been made for commercial purposes, bioprospecting played a major role in poverty alleviation or economic development even if one may still argue that it is too early to make conclusions at this stage. A research in the area notes, "there is little evidence to date of major benefits being derived in the form of royalties and milestone payments, and it seems that in-kind benefits such as research capacity and building scientific infrastructure will have the most potential both now and in the future."³⁸⁹ What did Ethiopia get from the *Teff* agreement in terms of direct financial benefits? Not yet except perhaps a license fee. Other financial benefits such as royalties are yet to come in the future but are not certain to come. There is, therefore, a need to develop a more strategic approach to ABS in Ethiopia.

Bioprospecting may still help to alleviate poverty in other ways. Effective regulations on access to GRs may contribute to poverty reduction by creating the basis for leveraging capacity building and transfer of technology through collaborative research such as by allowing access to new plant varieties with important qualities to improve the productivity of

389. K. Nandozie et al. (eds) (2003), *African Perspectives on Genetic Resources: A handbook of Laws, Policies and Institutions*, Environmental Law Institute, Washington, DC.

agriculture thereby improving the livelihood of poor farmers. Capturing non-monetary benefits may actually be more easily negotiated than the more elusive negotiation for securing monetary benefits which may not be of much significance in most cases. In fact, developing the country's capacity to build its own scientific infrastructure and research capacity through collaborative research using its GRs as a bargaining chip would ultimately ensure the acquisition of more significant benefits from access to the nation's GRs by adding value on the resources.

One important concern regarding stringent requirements on access to GRs is how far these affects research and development. The ABS law stipulates that the Institute of Biodiversity may provide facilitated access for certain group of applicants. Such a permit is to be issued for the benefit of three kinds of applicants: public research institutions, higher learning institutions and intergovernmental institutions based in the country. The permit is, thus, to be given for institutions rather than individuals even if the purpose is research. For example, such permits are not available to Ethiopians studying abroad who want to access GRs for research purpose- they have to go through the standard access procedures unless they are affiliated to public research institutions or higher learning research institutions. This may affect research negatively. Also absent in this exception are the NGOs. These organizations could play an important role by preserving GRs and doing research on GRs for the benefit of farmers and communities. It is not clear why they are not included in the special access procedure.

There could also be cases where the public research institutions and the universities engage in research jointly with private institutes. In all such cases the special permit will not be applicable. This permit does not also apply to foreign research institutes and higher learning institutions. While it is understandable that such foreign institutions could be driven by private commercial interests, foreign non-commercial institutions are not exempted from the strict access requirement. This blanket exclusion of foreign institutions may have a negative impact on scientific research and exchange of information. At least, the special permit should have been applicable to joint research projects between Ethiopian research institutions and foreign counterparts. These joint programs not only allow control and supervision over the resources, they also allow for capacity building for local research institutions and facilitate transfer of technology.

As noted, the exception for facilitated access does not apply to international research institutes such as the CGIAR even if the purpose is research and

development. The CGIAR has been operating under the principle of free flow of resources and information associated therewith. Ethiopia has contributed a lot to this research system and in a way contributed to the international agricultural research and improvement of crops for food security through the Green Revolution spearheaded by the CGIAR though that had not significantly changed the food security problem of the country. In view of the fact that the CGIAR system has over 40 per cent of accession on food crops, the cost-benefit analysis of limiting access to the system should be worked out carefully. It is also true that Ethiopia is not "self-sufficient" in all its needs for GRs and it still needs resources and knowledge from other countries and research institutes. Nevertheless, the access law seems to give emphasis on the country as provider of GRs not as a recipient of the resources. Of course, given the fact that the resources collected under the free access era are being appropriated by private parties and controversy is already raging as to the status of the already collected resources, Ethiopia may have genuine concerns on providing free access to more resources. In the face of increasingly dominant private power and appropriation of GRs through IPRs, Ethiopia has no option but to regulate the access to its GRs. But again the major issue is as to how to balance the different interests so that regulation would not have undesired consequences. In any case, the law does not lay down the conditions for facilitated access to GRs. The conditions of such facilitated access and the obligations to be assumed by the applicant are to be determined by the Institute as appropriate. This wide discretion without guidance may put the researchers at the mercy of the bureaucracy and is open to red tape and abuse.

It is important to note that despite the community friendly provisions of the ABS Law, the outcome may result in centralization of the power of the government. Communities have actually limited rights in GR governance. They do not have the right to give their PIC for access to their GRs; nor do they have a direct right of benefit sharing. The government determines how the communities utilize their share of the benefits. The law has granted significant power to the government while limiting the rights of communities.

It seems strange that the ABS Law, while standing on the premise that communities have been responsible for the conservation and preservation of GRs and consistently referring the GRs as 'their[communities'] resources', failed to grant them the right to say no to access to 'their' resources. Nevertheless, the issue of securing the PIC of communities is

challenging since it involves issues like defining the relevant community, the issue of representation, etc. Several cases indeed show the difficulty in obtaining PIC of communities. The problem in getting PIC from the Indian Kani tribal community and from the South African San people are good examples here. Thus, while requiring the PIC of the communities for access to GRs appears a logical outcome of the premises on which the ABS Law stands, the absence of the requirement makes the access procedure easier since securing the PIC of communities is obviously a complex task. The experience shows that communities have not had any say in the ABS agreements and the whole business was undertaken by the government and the companies concerned. But there should be a mechanism in place ensuring participation of the communities in the ABS decision making process as they are the first to be affected positively or negatively by the whole system.

Lastly, the law should be intended both to regulate and facilitate access and should not prohibitively be restrictive. Excessive regulation may increase transaction costs and discourage use of GRs. Clear and well thought-out policy objectives that articulate priorities, strategies and required incentives on access to GRs could help in addressing the country's need to boost its national capacity in research and innovation of its rich GRs and greatly contribute to poverty alleviation and food security objectives.

Conclusion

The analysis in this article has led to the following findings. First, the expectation for benefit sharing appears to be exaggerated and financial benefits are uncertain to accrue. The amount of the financial benefits from ABS even if they accrue is quite limited to contribute to poverty alleviation and economic development in a meaningful way. The focus should rather be on the use of access to GRs as a bargaining chip for technology transfer and capacity building which would contribute more to poverty alleviation and economic development than the financial benefits. Second, with the expectation of benefits, the regulatory regime puts stringent and unpredictable requirements on access to GRs for the purpose of research and development. The authors argue that the cost-benefit analysis of such a requirement for research and development has to be worked out. In this regard, it is worth emphasizing that there should be a clear, transparent and simplified access for research both by local and international research institutions to promote facilitated access for research and development. Third, the regulatory regime seeks to empower communities in the whole business of ABS. Nonetheless, much of what has been said about

communities remains at the level of rhetoric. This is so because local communities have only very limited power in the business while the government monopolizes almost all the decision-making power. It is clear that a mechanism has to be put in place to enable communities to participate and play a greater role in the decision making process.

Local laws should be intended both to regulate and facilitate access and should not prohibitively be restrictive. Excessive regulation may increase transaction costs and discourage use of CRs. Clear and well thought-out policy objectives that articulate priorities, strategies and required incentives for access to CRs could help in addressing the country's need to boost its national capacity to research and innovation of its rich CRs and greatly contribute to poverty reduction and food security objectives.

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