


## CONSERVATION OF BIODIVERSITY IN SUB SAHARA AFRICA: PROSPECTING FOR GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE REGULATION IN ETHIOPIA



 Abdussalam Mikail<sup>1\*</sup>

<sup>1,2</sup>Faculty of Law, Universiti Kebangsaan Malaysia

 Zinatul Ashiqin Zainol<sup>2</sup>



(+ Corresponding author)

### ABSTRACT

#### Article History

Received: 2 May 2018

Revised: 13 June 2018

Accepted: 24 June 2018

Published: 4 July 2018

#### Keywords

Legal regimes

Genetic resources

Traditional knowledge and

Ethiopia.

Legal protection and conservation of biodiversity in Ethiopia was taken so serious after the alleged misappropriation of Teff's case. In 2006, Ethiopia enacted a proclamation No 482/2006 on access to Genetic Resources and Community knowledges and Communities Rights with subsequent regulation in 2009 mainly for the implementation of the Proclamation. Under the Proclamation and the Regulation, genetic resources and traditional knowledge belong to the government of Ethiopia and People of Ethiopia, recognizing sovereignty of indigenous people over their GRs and TK. Both Proclamation and Regulation were not only enacted due to the lost of Teff but also to observe Ethiopia legal obligation under the Convention on Biodiversity. Member state to the Convention on Biological Diversity and Nagoya Protocol must observe their provisions by enacting law on protection and preservation of GRs and TK. The purpose of enacting law on protection and preservation of GRs and TK is to ensure that the users of GRs and TK access it with prior informed consent of the holder follow by mutually agreed terms on how benefit arising from the utilization of GRs and TK will be equally and fairly shared. A descriptive and analytical approach is used to analyze the laws regulating GRs and TK in Ethiopia. Despite the fact that the laws regulating ABS in Ethiopia are comprehensive, there are some keys areas that are crucial for the conservation of biodiversity which have not yet been addressed. The aim of this research is to examine the extends of legal regimes of GRs and TK in regulating access and benefit sharing in Ethiopia and addressing challenging such as misappropriation of GR and TK, and how it can be well dealt with.

**Contribution/ Originality:** This study contributes in the existing literatures by examining the inadequate of Ethiopian law on conservation of Genetic Resources and Traditional Knowledge. The finding reveal that Access and Benefit Sharing law in Ethiopia has some gaps to be filled in compliance to Convention on Biological Diversity and Nagoya Protocol precisely on GR and TK transboundary cooperation.

## 1. INTRODUCTION

Misappropriation of genetics resources and traditional knowledges is a threat to the conservation of Biodiversity in the world in general, it is a special case study in Sub Sahara Africa Countries (Amara, 2003). The root of the misappropriation started from the principle of common heritage of GRs when access to GRs was allowed

and permitted without any consideration to be exported to carry out scientific research or to develop products of commercial value (Oldham, 2004). After the adoption of Convention on Biological diversity (CBD), such act of access was seen as unfairness and sovereignty of state was recognized over GRs, which marked the demise of the principle of common heritage on GRs (Article 3 and 15 of CBD & Zinatul *et al.* (2011)). The doctrine of state sovereignty on GRs make it compulsory to comply with the regulations set by national governments before accessing GRs in compliance with the CBD and Nagoya Protocol (Zinatul *et al.*, 2011). Sub Sahara Africa Countries are home to crops and plant species that are sources of nutrition, fibre, medication and artistries. It follows therefore, indigenous local communities in Sub Sahara Africa and their developing economies could benefit substantially in the universal search for new sources of plant species, rich nutrition and medicine (Wakundah, 2012). Most of the Sub Sahara African Countries lack efficient legal and regulatory measures on genetic resources and traditional knowledge despite the fact that the international communities are promoting commitments to encourage access to genetic resources and traditional knowledges (Wakundah, 2012). They faced different challenges in fulfilling legal obligations under the international agreements, and most have yet to implement the conservation of biodiversity regimes, while those that have implemented it were forced to revisit their biological conservation approaches in order to comply with the international agreements (Munyi *et al.*, 2012). Genetic resources and traditional knowledge are simultaneously technical, legal, and policy oriented, cutting across many disciplines, this is why clerical regimes in Sub Sahara African usually experience persistent human and financial resources deficiencies (Munyi *et al.*, 2012). With the help of African Model law and other regional initiatives, Sub Sahara African are starting to move toward governing GRs and TK by increasingly recognizing the concrete administrative and legal welfares by increasing their sovereignty positions and methods in respect of GRs and TK (Melissa, 2010). One of the countries that took good initiative in that regard is Ethiopia. Despite the fact that the laws regulating ABS in Ethiopia are comprehensive, there are some keys areas that are crucial for the conservation of biodiversity which have not yet addressed (Sertse and Demissew, 2008). The aim of this research is to examine the extents of legal regimes of GRs and TK in regulating access and benefit sharing in Ethiopia and addressing challenging such as misappropriation of GR and TK, and how it can be well dealt with.

## 2. METHODOLOGY

Authors use descriptive and analytical approach to analyze the laws regulating GRs and TK in Ethiopia. For the purpose of achieving objectives of this research, qualitative method of analysis is exploited, sourcing relevant primary and secondary data from publication, journals and textbooks. The data collected from the various sources will be examined by analyzing what for and what against the prospecting for GRs and TK regulation in Ethiopia.

## 3. GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE REGULATION IN ETHIOPIA

The Federal Government of Ethiopia in 2006 enacted laws on access and benefit sharing of GRs and TK, the law is entitled “A Proclamation to Provide for Access to Genetic Resources, Community Knowledge and Community Rights (Proclamation No. 482/2006 & Gemedo (2010)). A subsequent regulation was issued to implement the Proclamation in 2009, entitled Regulation NO. 169/2009 on Access to Genetic Resources and Community Knowledge and Community Right (Jorge *et al.*, 2012; Munyi *et al.*, 2012). The legislation distinguishes between genetic resources and biological resources. The objective of the law among other things is to ensure just and unbiased share of profits arising from the exploitation of GRs and TK for the country and its communities (Article 3 of Proclamation No. 482/2006).

The provisions of Proclamation are applicable to access GRs and TK located in in situ or ex situ environments (Article 4 (1) of Proclamation No. 482/2006 & Gizachew (2011)). However, it does not applicable to the traditional usage and interchange of GRs and TK between Ethiopia Indigenous societies, or the transaction of GRs based

product for direct utilization that do not include specific use of GRs thereof (Article 4 (2), (a) and (b) of Proclamation No. 482/2006 & Jorge *et al.* (2012)). The definitions of biological resources and genetic resources in CBD was adopted by the Proclamation. Thus, the Proclamation explicitly stated that GRs includes derivatives (Article 2 (6) of Proclamation No. 482/2006). In Ethiopian law, GRs means any genetic material containing genetic information of actual or potential value, including derivatives. The word derivative is included in the definition of GRs in Ethiopian law, where as under the CBD GRs does not amount to derivatives.

According to the Proclamation, Community knowledge is the knowledge practices, innovations or technologies created or developed over generations by local communities on the conservation and use of GRs (Article 2 (14) of Proclamation No. 482/2006). The ownership of GRs and TK is clearly stated in the Proclamation making it to be particularly advanced in the most existing ABS measures. The Proclamation vested the ownership of GRs in Ethiopia in the government and people of Ethiopia while it vested the ownership of TK in indigenous community respectively (Article 5 (1) and (2) of Proclamation No. 482/2006). It is important to state the ownership of the GRs and TK as it is clearly mentioned in CBD and NP, however many ABS legislation presently in force do not precisely address it (Article 15 of CBD & Wakundah (2012)).

The purpose of vesting ownership of GRs in the state and Ethiopian people, and vesting the ownership of TK in the concerned indigenous community, is for the Proclamation to draw a distinction between GRs solely owned by the state, and the one which is owned by the relevant community holding it (Article 5 of Proclamation No. 482/2006; (Jorge *et al.*, 2012; Wakundah, 2012)) The ownership will determine the power of granting the access on GRs and TK and the right to enter into profit sharing agreement arising from the extracted GRs (Zinatul *et al.*, 2011). It will also determine the person who is entitled to receive profit sharing from the user to avoid ambiguity. The issue of the authority to receive the benefit aroused in Teff case when the user Health and performance Food International said that they have shared the benefit with the indigenous people without sharing the benefit with the legal body in term of ABS which is Institute of Biodiversity and Conservation (IBC), who was also contractual party in the agreement, and without sharing benefit through IBC channel or with the IBC knowledge (Regine and Tone, 2012).

The concept of ownership under the Proclamation means the law precisely acknowledges the right of local communities to regulate access to their community knowledge, their immutable right to use their GRs and community knowledge, and the right to share from profit arising out of the exploitation of their GRs and TK (Article 6 of Proclamation No. 482/2006, Zinatul *et al.* (2011)). The provision of article 6 of the Proclamation is consistent with the article 8(j) of the CBD which provides for the respect, conservation and preservation of knowledge, innovations and practices of indigenous and local communities...and for the equitable sharing of the benefits arising from the utilization of such knowledge, innovation and practices (Palmer, 1992; Nordin, 2011; Jorge *et al.*, 2012).

The CBD provides that “each contracting party shall endeavor to create conditions to facilitate access to GRs... (Article 15 (2) of CBD & Zinatul *et al.* (2011)) each contracting party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sectors facilitate access...” what is the access? The term access is not clearly defined under the CBD (Article 16 (4) of the CBD, Palmer & G 1992). However, the Proclamation clearly stated that unless the circumstance necessitates otherwise, access means the collection, possession, transfer or use of GRs and/or community knowledge (Article 2 (1) of the Proclamation No. 482/2006).

It further provides that GRs or TK shall not be accessed in Ethiopia save in possession of written access permit granted by the Institute based on prior informed consent of their holders (Article 11 and 10 of the Proclamation No. 482/2006). The Institute refers to the Institute of Biodiversity Conservation established by Proclamation No. 120/98 (Article 2 of the Regulation No. 169/2009). Institute of Biodiversity Conservation is the national authority given competent power to monitor and ensure compliance with the ABS permit system, which includes granting of PIC by the Institute for both commercial and noncommercial application (Article 12 (1) & (2) of the Proclamation

No. 482/2006). Thus, in no other circumstances you can acquire TK and GRs in Ethiopia without having written permit from the recognized authority, failure to do so will be considered as non compliance to the regulation which is punishable under the law (Article 11 and 10 of the Proclamation No. 482/2006).

Regarding exportation of GRs and TK, one should get a special export permit to be granted by the Institute to that effect (Article 11 (3) of the Proclamation No. 482/2006). It is also required to get a permit from the Institution for exploration of GRs and TK, however, state organs in charge of conservation of GRs and TK are exempted from obtaining exploration permit in discharging their state duties to conduct exploration of GRs. (Article 22-25 of the Proclamation No. 482/2006). More so, as an exception to general rule, access for the traditional use and exchange of GRs and TK by and among Ethiopian indigenous communities and use of GRs for immediate use which does not include use of GRs does not need a written access permit from the the Institute. In addition, State agencies which are empowered by law to conserve GRs, are not also expected to get a document showing a permit for access (Article 4 (1) to (4) of the Proclamation No. 482/2006 & Article 15 (1) of the Proclamation & *Jorge et al. (2012)*).

Moreover, the Institution may deny the access in the following situations: (i) if access application is made for a risked species GRs; (ii) if the access is detrimental for human health or the cultural values of the indigenous community; (iii) if it may cause unfavorable effect on the environment or if it could cause loss of ecosystem; (iv) if an access is intended to use GRs for a purpose conflicting with the national laws of Ethiopia or if there has been an experience of violating access agreements before on the applicant side (Article 13 (1) – (6) of the Proclamation No. 482/2006).

The Institute may even alter, suspend, terminate, put limitation on the size of GRs to be accessed or put any other appropriate limitation on access if the holder of permit dishonored or failed to observe the provisions of the Proclamation or the terms and conditions of the access agreement or where the access causes risk of destruction to GRs or the environment or affects superseding public interest or if there is an evidence of risk of genetic loss or humiliation of the environment (Article 21 of the Proclamation No. 482/2006). Accessing GRs or TK without access permit or providing false information during access application or subsequent stages is a serious offence under the Proclamation. Moreover, Changing purpose for which the resource is accessed and exploring GRs without the permission from the Institute are punishable under the Proclamation (Article 21 of the Proclamation No. 482/2006).

In order to ensure compliance, any violation against the provisions of the Proclamation is punishable by the following penalty: (i) confiscation of the genetic resource accessed in violation; (ii) cancellation of access permit granted, this is applicable where there is violation of an access agreement by the access permit holder; (iii) civil liability equivalent to the damage caused due to the violation; (iv) criminal liability could also arise from such kind of violations; and it could be a rigorous imprisonment not less than three years and a fine of not less than ten thousand and not exceeding thirty thousand birr; (v) if the offence is committed in relation to GRs endemic to Ethiopia, the punishment shall be, depending of the circumstance, rigorous imprisonment of not less than five years and not exceeding twelve years and a fine ranging from fifty thousand birr to hundred thousand birr. Where the offences under this article are committed in negligence, the penalty shall be a fine of not less than five thousand birr or, depending on the circumstance and the gravity of the offence, simple imprisonment of not less than three months (Article 33-35 of the Proclamation No. 482/2006). Both civil liability and criminal liability can be imposed for the violation of the Proclamation, however, the instance where both liabilities can be imposed is not clearly mentioned in the Proclamation, is it civil liability for breaching access permit agreement or breaching the terms and condition in mutually agreed term on benefit sharing or both liability can be imposed for accessing GRs and TK without due permit from the Institute? (Article 33-35 of the Proclamation No. 482/2006).

#### 4. INSTITUTIONAL FRAMEWORK OF GENETIC RESOURCES AND TK IN ETHIOPIA

There are several institutions in Ethiopia governing and protecting the sustainability of GRs and TK. The general supervision of GRs with regard to wild animal is under the Ministry of Agriculture and Rural Development. It is also responsible for the execution of the provisions of the Proclamation related with GRs of wild animals (Article 26 of the Proclamation No. 482/2006). However, the Institute of Biodiversity Conservation is the highest qualified national authority authorized to supervise and ensure compliance with the domestic ABS permit system, which includes granting of PIC, issuing code of conduct determining the fundamental doctrines for access and exploitation of GRs and TK, mutually agreed term and benefit sharing (Regulation No. 169/2009).

#### 5. THE INSTITUTE OF BIODIVERSITY AND CONSERVATION

The Institute is empowered to monitor and ensure that the access agreement is carried out as agreed and as per the pertinent legal provisions. It also conducts the execution through examination, periodic development and status report by access permit holders and the appropriate institutions nominated to accompany the collection, partake in the research and monitor the execution of access agreement and a report by any other individual or other organizations as demand appropriate (Article 27 (1) and 20 (1) of the Proclamation No. 482/2006).

The benefits obtainable from access agreement will be collected by the Institute as a highest authority to bargain the access agreement on GRs and TK and it will then pass it to the immediate beneficiary i.e indigenous communities. Where the beneficiaries are communities as it is mentioned in article 9 of the Proclamation, the communities have the right to share 50 per cent of any monetary benefit from the Grs and TK extraction and commercialization. The responsibility of the Institute is to make sure that the benefits get to the communities by channeling the benefit realized from the specific GRs to the immediate holder of such GRs and TK (Article 27 (2) of the Proclamation No. 482/2006 & [Gizachew \(2011\)](#)).

The Institute prepare access agreement model as an essential disseminate to users' information on access to GRs and TK. Further more, it issues a directives and perform such other activities crucial for the application of the Proclamation, and assign its power and duties to other legally established bodies, where deemed required as a convenient to carry out its duties in a better way (Article 27 (3), (5), (6), (7) and (8) of the Proclamation No. 482/2006).

After IBC, local communities take great role in preservation of GRs and TK in Ethiopia. The concerned communities are main stakeholder and participants in implementation of ABS by prohibiting any person who is not member of their communities from collecting or taking GRs in their community without having required permit. The local communities will request any person who does not belong to their communities, who is collecting or taking GRs from their localities, to show his access permit, and if he does not secure any permit, the communities will instantly notify or bring him to the nearby kebele or wereda management (Article 28 (1) and (2) of the Proclamation No. 482/2006 & [Sertse and Demissew \(2008\)](#) & [Gizachew \(2011\)](#)).

Kebeles, Weredas and other relevant regional organizations are entrusted with the responsibility similar to local communities' responsibility to preserve and protect GRs and TK in Ethiopia ([Sertse and Demissew, 2008](#); [Dagnachew, 2013](#)). The only difference between them can be inferred from the provision of the law where it is required of regional bodies to only ensure that genetic resources are not accessed from their jurisdiction without access permit and to request a permit from anyone who does not belong to the community (Article 29 of the Proclamation No. 482/2006). However, a person can be brought before Kebeles and Weredas for accessing GRs and TK without due permit, whereas local communities have to refer non compliance to the Kebeles and Weredas administration (Article 28 (1) and (2) of the Proclamation No. 482/2006 & [Gizachew \(2011\)](#)).

Custom offices play a vital role in avoiding illegal exporting of GRs out of Ethiopia ([Dagnachew, 2013](#)). They have responsibility to ensure that any GRs being exported has been accompanied with an export permit authorized by the Institute and request any person leaving the country who is transporting or is in possession of GRs to tender



authorized permit to this effect from the Institute, this is considered as the main duties of the custom offices with regard to the conservation of GRs and TK in Ethiopia (Article 30 of the Proclamation No. 482/2006 & [Gizachew \(2011\)](#)).

Likewise, the custom offices the duty is bestowed on the postal and other courier service bodies to request from their clients to tender export permit from the Institute before accepting and allowing GRs and TK to be posted to another country (Article 31 of the Proclamation No. 482/2006).

The last institution under the Proclamation to take part in implementation of ABS system in Ethiopia is the Quarantine control institution ([Dagnachew, 2013](#)). Their duty is to certify that the quarantine certificate they issued to biological resources products, include an assertion denoting that the certificate does not represent a permit to use the product as GRs, issuing quarantine certificate to use product as GRs by Quarantine control institution is prohibited and would be regarded as an offence (Article 32 of the Proclamation No. 482/2006 & [Munyi et al. \(2012\)](#)).

The law in Ethiopia is trying to involve necessary agencies and institution in preservation and protection of GRs and TK and taking pro active measures to ensure that the GRs and TK would not be easily appropriated or losing their sovereign right as it happened in Teff case.

## **6. PROSPECTING FOR GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE REGULATION IN ETHIOPIA**

Ethiopian lost most of their right in Teff case due to the least assess to the professionalism of bioprospecting from the various body involved in negotiation and implementation of ABS agreement ([Sangal, 2000](#); [Regine and Tone, 2012](#)). Many possibilities to settle the dispute by mean of mediation were tried, to the extent that Secretariat of the CBD was notified to start arbitration according to the the procedure established under the CBD, Annex II, Part 1, however, all effort by the Institution was proved abortive (Article 13 of the Teff Agreement & [Abenet \(2010\)](#)).

Failure of Teff agreement implementation connotes that none of the provisions on penalties, monitoring and follow-up, and dispute settlements in that agreement had been executed ([Regine and Tone, 2012](#)). Therefore, compliance was a major concern, although it was precisely clear in the agreement that Ethiopian law would apply for compliance and it was agreed on a procedure even though the law was feeble because during that time there was no specific law on the regulation of GRs and TK ([Bayou, 2005](#)). As for the provider and user country measures, if there is no international law on compliance it is a matter of a gentleman's agreement because in case of failure of agreement which international court are they going to refer it to, and if there is a court, the costs would be a barrier for developing countries such as Ethiopia ([Regine and Tone, 2012](#)). Meaning that, the dispute settlement method is a crucial key in the ABS regulation, the law has to be comprehensive on how dispute will be settled amicably for better protection of GRs and TK and their holder's right.

Ethiopian learned lesson from the Teff failure agreement to better identify various possible interpretations and loopholes, meanwhile, negotiators of future ABS agreements should read through the draft text even more thoroughly, with that specific purpose in mind. There might be a need for an international third party to follow up on any violations of future ABS agreements to ensure compliance from time to time, the ambassador of Ethiopia to the users' countries can serve this purpose.

Pursuant to the law, supervision of wild animal GRs is under the Ministry of Agriculture and Rural Development, if the ministry is in charge of wild animal GRs, is the ministry entitle to enter into mutually agreed term with the user? is it entitle to take the benefit in that regard? The law is silent in that regard, that was why it took one year after Teff agreement had been signed before IBC could get involved. Such kind of coordination might be an explanatory factor for the reason why negotiation efforts were attempted quietly late in Teff case which later led to the appropriation of Teff. There is a need for comprehensive provision of the law in respect of the authority

which can enter into agreement on GRs and who can obtain the benefit thereof be it general GRs and TK or wild animal GRs in order to avoid confusion as it was occurred in Teff case (Minkmar, 2011; Abdussalam and Zinatul, 2017).

Upon the lost of Teff case, reputable legislations were enacted for proper conservation of GRs and TK in Ethiopia to that effect. It makes access to GRs and TK to be well regulated in Ethiopia and their regulations could be one of the most comprehensive legislation on access and profit sharing arising from the exploitation of GRs and TK in Sub Sahara Africa. One of the reasons is that Ethiopia Proclamation and Regulation are deliberately complied with the provisions of CBD and NP, and even took innovative measures to ensure the conservation of GRs and TK after they learned their lesson from the misappropriation of Teff (Minkmar, 2011; Abdussalam and Zinatul, 2017).

Never the less, as the situation is almost the same in Sub Sahara Africa Countries, once GRs and TK left the Ethiopia, it is difficult to follow up whether the access agreement is observed and the terms of the agreement might be breached, this is because the IP is territorial in nature (Regine and Tone, 2012). The enforcement of the law in foreign countries is not an easy task as it involves complicated issues like enforcement of foreign judgement and other issues of private international law (Regine and Tone, 2012). Furthermore, the cost of enforcement may not be affordable to poor developing country like Ethiopia to go through expensive court proceedings on enforcing access agreement in case of challenging the patents (Canon, 2009; Gizachew, 2011; Archibold, 2013).

It is worth to mention that both Proclamation and Regulation did not provide amicable means of resolving violation of their provisions, the agreement on the access and their terms and conditions are civil in nature and in case of any breach of the term of agreement, it will be reasonable to provide the means on how such dispute could be settled by a civil means ([www.abs-initiative.info/cases-ethiopia.html](http://www.abs-initiative.info/cases-ethiopia.html), [www.teff-grain.com/](http://www.teff-grain.com/), [www.gmdu.net/corp-841866.html](http://www.gmdu.net/corp-841866.html) and [usa.com/about.htm](http://usa.com/about.htm), <http://teff-grain-usa.com/index.html>). The material transfer agreement on GRs and TK is just like mere contractual agreement, whereby if there is any breach of such agreement, the matter will be settled in a civil court and where there is arbitration clause in the agreement, the parties might choose to settle it amicably outside the court. If the legislation is clear on such issue Ethiopia might not loose IPR on Teff, for that reason, it will be of much advantage to insert the provision on how the dispute could be resolved amicably (Regine and Tone, 2012).

More so, there should be a provision on how misappropriation of GRs and TK inside and out the country could be settled amicably. Ethiopia law should further address the issue where GRs and TK are found in transboundary situation, in order to be able to preserve GRs and TK they might be having in common with their neighbor countries (Muller, 2013). Take for instance, the medicinal value of the well known home remedy medicinal plant in Ethiopia, Tena Adam (*Glinus lotoides*) was reported to be found in Egypt and Mali. Some neighboring country might possess or share similar confidential TK, however, sharing the same TK is ontologically impossible, due to the fact that what they shared is very similar or even almost identical TK related to biodiversity or GRs uses and applications. In that situation, there will be unlimited options to obtain and access this TK from multiple sources or at least as many options as communities having the custody of such TK (Muller, 2013; Harriet, 2017).

In addition, as exception to general rule, access for the traditional use and exchange of GRs and TK by and among Ethiopian indigenous communities and use of GRs for immediate use which does not include use of GRs, does not need a written access permit from the the Institute. In addition, State agencies which are empowered by law to conserve GRs, are not also expected to get a document showing a permit for access (Article 4 (1) - (4) of the Proclamation No. 482/2006 & Abeba (2010)). There should be a measure to ensure that indigenous people and State agencies do not misuse the right given to them to access GRs and TK for the traditional use and exchange it among themselves without taking access permit in order safeguard sound preservation and conservation of GRs and TK.

## 7. CONCLUSION

Misappropriation of GRs and TK is an obstacle being facing by the African community at large with a special situation in Ethiopia having taking misappropriation of their traditional knowledge a serious issue after the case of their lost Teff. GRs and TK is more regulated in Ethiopia due to their experience of misappropriation of their GRs and TK and their legal frameworks are almost compatible with provisions of International Conventions and Treaties on conservation of biodiversity.

The proclamation need to includes provisions on transboundary cooperation on GRs and TK where some country may be sharing the GRs in common and there will not be a specific place to take permit for accessing such GRs and TK. This might let the country loose their sovereign right on GRs and TK and the users might claim the notion of common heritage as enshrined in the provision of International Undertaking on Plant Genetic Resources for Food and Agriculture 1983, if there is no specific place to secure permission for access.

Sub Sahara Africa countries are facing challenges of monitoring the GRs and TK out side their countries, this is because IP is territorial in nature and they can not ensure the compliance in another country unless if the law in resident place of the users regulate the use of GRs the same way as the provider country. One of the factors that contributed to the failure of the Teff agreement was that the agreement could not be implemented properly in the user's country and there was no way to ensure the enforcement of the Teff agreement in the user's country. This issue has to be dealt with in international level but before that, Ethiopia government can take advance legal measures by regulating compliance measure through their embassy in the users' country to ensure enforcement against any violation of access to GRs and benefit sharing in another country. After failure of Teff agreement, the government enacted various legislations for the purpose of vigorous implementation of ABS in Ethiopia, unfortunately, one could hardly find the provision in both Proclamation and Regulation on how to enforce violation of access to GRs and benefit sharing agreement outside the country which could be considered a crucial reason for legislating such laws. There should be cooperation between IBC and Ethiopian IP office as the proclamation fully conferred the power on IBC to negotiate and sign agreements including follow ups and compliance measures of ABS of GRs and TK without taking IP office along. The IBC should be working together with IP office and sharing expertise owned by the IP office to ensure successful negotiation and agreement on ABS.

Although there are many institutions involved in conservation of GRs and TK in Ethiopia, there should be a forum for all of them to be communicating and they should not be working individually and they should be equipping other institutions with more awareness on the values and provisions of proclamation.

**Funding:** This study received no specific financial support.

**Competing Interests:** The authors declare that they have no competing interests.

**Contributors/Acknowledgement:** Both authors contributed equally to the conception and design of the study.

## REFERENCES

- Abdussalam, M. and A.Z. Zinatul, 2017. Adequacy of legal framework for combating appropriation of genetic resources and traditional knowledge in Sub Sahara Africa. Published in the Conference Proceeding of ASIA International Multidisciplinary Conference, Uitm Johor Malaysia, 2017.
- Abeba, T., 2010. Materia transfer agreements on Teff and Vernonia, Ethiopia plant genetic resouces. *Journal of Politics and Law*, 2(4): 77-89.
- Abenet, G., 2010. Teff: The story of Ethiopia's biodiversity. Occasional Report No 5, Forum for Environment.
- Amara, E., 2003. In Africa perspectives on genetic resources: A handbook on laws, policies, and institutions governing access and benefit sharing. Washington D.C: Environmental Law Institute.
- Archibold, M., 2013. The importance of patenting traditional medicines in Africa: The case of Zimbabwe. *International Journal of Humanities and Social Sciences*, 3(2): 236 246. [View at Google Scholar](#)



- Bayou, M., 2005. Bioprospecting experiences in Ethiopia. Presentation to the Regional ABS Capacity Building Workshop for Eastern and Southern Africa, 2–6 October 2005 Addis Ababa.
- Canon, S., 2009. Ethiopia may offer next great grain. Wichita Eagle (Wichita, KS). Retrieved from <http://ethiopianreview.com/index/14007> [Accessed 16/6/2016].
- Dagnachew, M.T., 2013. Biopiracy: International perspective and the case of Ethiopia (Legal and Institutional Regime). A Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of Master of Laws (LL.M in Business Law) to the School of Law, Addis Ababa University.
- Gemedo, D., 2010. Access and benefit sharing agreement on Teff (*Eragrostis tef*) and its implementation. In *Teff: The story of Ethiopia's biodiversity*. Addis Ababa: Forum for Environment.
- Gizachew, G., 2011. Protection of Traditional Knowledge Under International and Ethiopia law with a particular reference to traditional medical knowledge: Current trends, prospects and challenges. A Thesis Submitted in Partial Fulfillment of the Requirement of LL.M Degree in Public International Law, School of Law, Addis Ababa University, Ethiopia.
- Harriet, D., 2017. Transboundary knowledge and regional cooperation in the protection of traditional knowledge in Kenya. *Journal of Intellectual Property Law and Practice*, 12(3): 226-235. [View at Google Scholar](#) | [View at Publisher](#)
- Jorge, Cabrera and Medaglia, 2012. Access to genetic resources and benefit sharing challenges and opportunities in implementing the Nagoya protocol. 2nd Edn., Los Angeles, United States: Centre for International Sustainable Development Law. pp: 93.
- Melissa, L., 2010. Access and benefit sharing in the wake of CBD Cop10: The Nagoya protocol and its potential implications for South Africa. *South Africa Journal of Environmental Law and Policy*, 17(2): 69-95.
- Minkmar, L., 2011. The 'Teff flour' patent. A current case of bio patenting and its significance in *Elni Review*, 2(11): 79-81.
- Muller, M.R., 2013. Protecting shared and widely distributed traditional knowledge: Issues, challenges and options. Geneva Switzerland: International for Trade and Sustainable Development. Issued Paper 39. pp: 21.
- Munyi, P., R. Olivier and H. Fabian, 2012. A compendium of selected ABS laws in Africa (The ABS Capacity Development Initiative). Retrieved from [www.abs-initiative.info/compendium.html](http://www.abs-initiative.info/compendium.html) [Accessed 9 February 2012].
- Nordin, R., 2011. Protection of indigenous knowledge: Mismatch between the convention on biological diversity and TRIPS agreement. *Journal of Law and Society*, 5(7). [View at Google Scholar](#)
- Oldham, P., 2004. Global status and trends in intellectual property claims: Genomics, proteomics and biotechnology. *UNEP/CBD/WG-ABS/3/INF/4(1)*: 43. [View at Google Scholar](#)
- Palmer, G., 1992. The earth summit: What went wrong at rio? *Washington U Law Quarterly*, 70(4): 1005-1028. [View at Google Scholar](#)
- Regine, A. and W. Tone, 2012. The access and benefit-sharing agreement on Teff genetic resources fact and lessons. Norway: Fridtjof Nansen Institute.
- Sangal, P.S., 2000. Enforcement of intellectual property rights and dispute settlement. *Malaysian Journal of Law and Society*, 4: 74-86.
- Sertse and Demissew, 2008. Is it an act of biopiracy over Ethiopian most critical crop teff (*Eragrostis tef*) in Tigray Online. Retrieved from [http://tigraionline.com/biopiracy\\_teff.html](http://tigraionline.com/biopiracy_teff.html) [Accessed 1 May 2008].
- Wakundah, J.M., 2012. Why protect traditional knowledge, African technology policy studies network, Nairobi. Philippe C, plant variety protection in Africa, towards compliance with the TRIPs agreement. *Journal of African Law*, 45(1): 97-122.
- Zinatul, A.Z., A. Latifah, A. Frank and R. Rosli, 2011. Bio-piracy and states sovereignty over their biological resources. *Africa Journal of Biotechnology*, 10(58): 12395-12408. [View at Google Scholar](#)

*Views and opinions expressed in this article are the views and opinions of the author(s), International Journal of Asian Social Science shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.*