Why Informal Seed Sector is Important in Food Security

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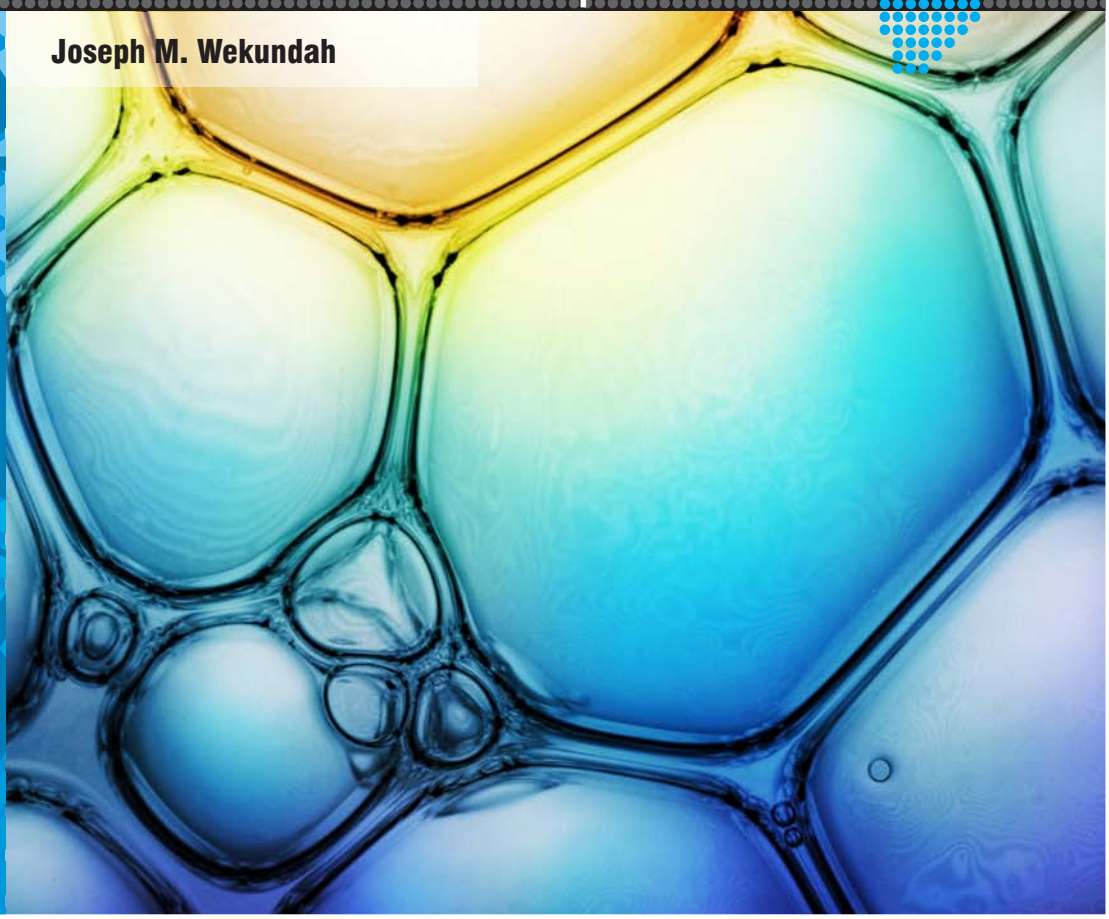

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List of Acronyms

ASAL	Arid and Semi Arid Lands
ATPS	African Technology Policy Studies Network
AU	African Union
BTA	Biotechnology Trust Africa
CSIR	Council of Scientific and Industrial Research
IP	Intellectual Property
ILO	International Labour Organization
IK	Indigenous Knowledge
IPR	Intellectual Property Rights
ISTA	International Seed Trade
OECD	Organization for Economic Cooperation and Development
STAK	Seed Trade Association of Kenya
TEK	Traditional Environment Knowledge
TK	Traditional Knowledge
TRIPS	Trade-Related Aspects of Intellectual Property
UPOV	Union for Protection of New Plant Varieties
WHO	World Health Organization
WTO	World Trade Organization
WIPO	The World Intellectual Property Organization

Introduction

The desk study on the Intellectual Property (IP) environment in Eight East and Southern Africa countries (Ethiopia, Kenya, Uganda, Tanzania, Malawi, Lesotho, Swaziland and Mozambique) revealed that only two countries (Kenya and Tanzania) have Plant Breeders Rights laws under UPOV convention 1978. Two other countries i.e. Uganda and Lesotho have their bills awaiting approval by parliament for implementation. The others have no Plant Breeders Rights hence they rely on Seed Acts for phytosanitary process, importation and exportation of seeds.

The International and Regional Treaties/protocols or conventions have provided some opportunities for the protection of plant varieties, however, the national Governments have not yet seized those opportunities. For example, the TRIPS Agreement has Article 27.3(b) and provides for the countries to develop alternative system to patenting in the protection of plant varieties. Two countries have gone the UPOV way as indicated (Kenya, Tanzania) however all the others have not yet seized the opportunity to develop policies and legal frameworks towards plant variety protection. Ethiopia however is the only country that emphasizes the Plant Breeders Rights and Farmers Rights as stipulated in the International Treaty on Plant Genetic Resources and Food and Agriculture. UPOV 1978 has farmers' priviledge for purposes of allowing farmers to save seed from their crop to plant in the following season, but it does not allow them to exchange or sell the seed.

This policy paper will therefore attempt to provide the background and understanding of informal and formal seeds sectors, the current status in the region, opportunities available through the International treaties/conventions/protocols; policies and legal frameworks required and the way forward for the National Governments in Africa.

What is the Background & Role of Seed Sector in Eastern & Southern Africa for Food Security?

During the 1970s the national Governments and donors recognized the importance of quality seeds and all their support went to the establishment of highly subsidized formal seed sector mainly seed parastatals. However, their successes were limited due to several reasons including financial sustainability and lack of small scale farmers' orientation in both variety development and seed supply chains. In the 1980s there was a policy shift of disbanding the parastatals and encouraging the private sector development.

Being a profit driven undertaking, the commercial seed companies were confined to seeds of hybrid maize and vegetables targeting high potential areas. Therefore seeds of grain legumes like beans or other minor crops such as sorghum and vegetatively propagated crops were and are rarely supplied by the formal seed sector, unless when they were/are purchased in bulk by development and/or relief operations. As a result, during the 1990s, NGOs, and rural development/relief agencies became interested in the seed sector by supporting community owned/based seed production and supply.

Their aim was to transform local community farmer (seed producers) into formal seed producers. Though the sustainability was limited, the approach was successful in accessing the seeds to remote and poor farmers. In the 2000s there was a renewed effort to improve seeds accessibility with focus on supporting the private sector (small and medium enterprises) and also the establishment of business-friendly seed regulations such as harmonized seed regulations across sub-regional organizations e.g. East and Central Africa, Southern Africa and Western Africa regions. Despite the good efforts, the companies tended to focus more on profitable crops/varieties e.g. hybrid maize and other high value crops (vegetables and flowers) rather than a range of crop species which constitute the backbone of the poor resource farmers' food security/cash e.g. pulses, small grains and tubers and roots.

Seed is one of the most critical inputs in agricultural production. Good quality seed has significant potential of increasing on-farm productivity and enhancing food security. The seed industry as indicated above has undergone dynamic changes within individual countries, regions and globally.

These changes have come with challenges that require institutional reforms in the local seed industry. With the advent of liberalization, local and foreign seed companies have continued to play an increasing role in seed research, breeding, multiplication and trade.

Regional integration and international trade, together with scientific advantages in the area of biotechnology, have posed additional challenges that require the local industry to quickly adapt to the changing environment in order to remain competitive both locally and regionally.

What are the Seed Systems Found in Africa?

There are three major groups of seed supply systems identified in Africa. These are: Informal seed supply (local seed supply systems), Integrated seed supply (community based) systems and the Formal seed supply systems.

3.1 Informal seed supply systems

It focuses on farmer management of local varieties which have been selected overtime and produced under local circumstances. The system covers methods of local seed selection, production and diffusion. The systems are sometimes described as traditional and informal, operating mainly at the local level through exchange mechanisms and involving limited quantities per transaction. In addition, the varieties will have special attributes e.g. taste and nutrition that give the varieties added value within the community.

The system builds on the huge agro-biodiversity present within the boundaries of the African states. These systems provide about 80-100% of the seed used in the African states.

3.2 Integrated seed supply systems (community based seed systems)

These systems cover methodologies that aim to improve the local supply systems, borrowing technologies and improvements from the formal sector and using informal channels. The systems focus on improving local varieties through breeding and seed selection and introducing improved seeds from NARS, and International Agricultural Centres. The systems make use of the large variety of both locally improved crops as well as seeds of improved varieties released by the formal systems. It operates between the formal and informal seed systems as they can introduce both improved varieties as well as proven, quality declared seeds of local varieties. Quality declared seeds are sometimes referred to as standard seeds where regular inspections are conducted for diseases and pests. These systems could also produce certified seeds through the use of formalized and standardized quality control measures using small scale seed enterprises, and integrating them into seed markets. The systems can also improve on the informal systems to produce standard seed and/or quality declared seeds, for exchange within the community.

3.3 Formal seed supply systems (commercial sector)

The formal seed supply systems cover seed production and supply mechanisms that are ruled by defined methodologies. The systems mainly deal with hybrids and specialized horticultural crops, well-developed sectors; where hardly any public support is needed. The systems have uniform standards based on distinctness, uniformity and stability (DUS). The national governments can only support this sector through designing policies and regulatory framework that strengthen efficiency and effectiveness of variety release, seed quality control, phytosanitary measures and plant breeders' rights. In some cases, financial incentives may be necessary to get sustainable businesses off the ground (small and medium enterprises) and again public investments in research and capacity building is important. This sector produces only 10-20% of the seed requirements by the national governments in Africa.

What is the Status & the Economic Value of Seed Industry?

Status

The majority of farmers in Africa mainly get their seeds from the informal channels which include farm saved seeds, seed exchanges among farmers and/or local grain/seed market. These channels contribute about 80-100% of seed supply depending on the crop and country. Despite the importance of these systems, unlike the formal, informal sector systems are rarely supported by governments. Subsequently, its improvement has been limited or non-existent.

Therefore, this has negative effects on agricultural productivity and the income of farmers and more particularly to poor and marginalized farmers. It has been proved that once well supported and linked to sources of improved varieties, the informal seed sector can be a reliable and efficient way to access improved varieties of crops whose seeds attract a very limited interest of commercial seed sector. Therefore an integrated seed system carried out by NARS and partners, with support from the International Centres, play a crucial role in improving the informal seed supply towards the standard seed or to some cases formal seed supply systems.

The Kenyan seed industry has developed into a vibrant regional leader with 67 seed enterprises currently operating in Kenya. But the informal seed sector still accounts for 80% of the total seeds produced. In 2007, national requirements for certified seeds ranged between 28,000 and 35,000 metric tons with maize seeds accounting for about 80% of the total quantity.

Even with that amount of seed, it only contributes 20% of the total seeds produced. Kenya still experiences shortage of quality seed for crops like potatoes, wheat, and some pulses and certain varieties of maize seeds suited for Arid and Semi Arid Lands (ASAL), partly because farmers plant wheat and potatoes and other crops from their previous harvests, but partly because they have no alternative (no seeds available).

Economic value of seed globally

The commercial world seed market is approximately valued at US$30 billion. Out of these, Sub-Sahara Africa accounts for only US$800 million, representing only 3%. The key players in the African seed industry contributing to the 3% includes: South Africa US$160 million, Morocco US$160 million, Egypt US$140 million, Nigeria US$120 million, Kenya US$42 million, Zambia US$15 million and Malawi US$10 million. Other African countries contribute to the balance. On the International level, USA and European Union account for US$7.5 billion, and US$5.2 billion respectively. The main crop species dealt within the International trade of seed are maize – US$800 million, herbage US$427 million, potatoes US$400 million, beetroot US$308 million, Wheat U$75 million, horticultural crops US$1.15 billion. Other seeds dealt in are valued at US$740 million. Seeds therefore need to be handled carefully in order to fully exploit their benefits and potential. Governments will require clear strategies to encourage improvement of the informal seed sector towards quality declared seed supply to gain from its benefits and potential.

What are the Opportunities Available from the International & Regional Treaties, Agreements, Protocols, etc.?

Most countries in Eastern and Southern Africa are either members of TRIPS or are about to be members. This agreement (TRIPS) recognizes the need to protect innovations. However, it has provided an opportunity, through Sui-generis, under which UPOV was established to protect plant varieties. The same article 27.3(b) has opportunities for the national Governments to establish policies and legal frameworks that can protect farmers' rights in the seed industry. The AU Model law is concerned with access to biological resources and it provides a few pointers for the development of property rights over plant varieties and recognizes the need to protect the rights of local communities over their biological resources, their knowledge and practices. It further affirms local communities' inalienable right to keep, use, exchange and share their biological resources (seeds) that sustain their livelihoods.

The International Treaty for Plant Genetic Resources for Food and Agriculture (IT-PGRFA) affirms the sovereign rights of national Governments over their plant genetic resources and recognizes both the Breeders and the Farmers' Rights.

The international debate resulted in formulating justification for Farmers' Rights. However, the wide diversity of relevant stakeholders' views spurred a lengthy debate on the contents of rights and whether such rights should be of private, community or common nature. This included debates on the inclusion of Farmers' Rights into the sui-generis option of TRIPS by reducing the uniformity and novelty requirements of Plant Breeders' Rights to accommodate the protection of farmers' varieties in the regular breeders' rights system. These debates led to formal policies notably in the African continent and in India where model laws were formed that combine both breeders' rights and farmers rights' e.g. the AU Model Law.

Article 9.1 of IT-PGRFA contains the justification, that the contracting parties recognize the enormous contribution that local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agricultural production throughout the world.

Article 9.2 of IT-PGRFA provides responsibilities i.e. the contracting parties agree that the responsibility for realizing Farmers' Rights as they relate to plant genetic resource for food and agriculture rests with National Governments. This means that the issue of Farmers Rights is the responsibility of the National Governments.

Article 9.3 of IT-PGRFA is where interpretation of the right to save, use, exchange and sell farm saved seed is made, but subject to national law and as appropriate. This still points out that the responsibility is with the national governments, although many experts regard this article as void since it explicitly subordinates the interpretation of the Farmers' Rights to the scope of other national laws. However, even if taking into consideration that Farmers' Rights is primarily a national responsibility the Governing body of IT-PGRFA should consider it useful to advice national governments on possible ways to operationalize Farmers' Rights and on the need to develop laws or regulations that provide the proper framework for such implementation.

Finally, UPOV roots for plant breeders rights and UPOV 1978, includes farmers' privilege to save seed from their harvests; to plant in the following season, however, it is against selling to other farmers.

Over and above the International treaties, and agreements discussed above, there are organizations on International level that handle various issues affecting the World Seed Industry, especially the formal seed sectors: The Organization for Economic Cooperation and Development (OECD) gives regulatory guidelines on field certification standards; while the International Seed Testing Association (ISTA) provides rules for seed testing. Seed trade industry issues are articulated by the International Seed Federation (ISF) which encompasses both public and private industry representatives of breeders and seed companies. Even with these organizations setting standards for the formalized seed supply system, the challenge will be on the IPR for Genetically modified organisms on some protected plant varieties. Secondly, there are no rules for the informal seed supply systems which appear neglected and yet it provides most of the seed nationally in Africa.

What Policies & Legal Frameworks Do the Target Countries Have?

Under normal circumstances, a national Government is expected to develop policies before the legal frameworks. However, most African countries start with the legal frameworks before developing policies. Kenya for example established an IPR legal frameworks in the late eighties/early nineties and to date only a draft policy is developed. Similarly, Seed Acts and/or plant variety Protection Acts have been in existence for over a few decades and yet the policies to guide the direction of the Acts were only recently developed.

It has also been noted that most Acts developed by the African countries are in response to a crises e.g. In the case of Kenya the IPR Act was developed based on the dispute on ownership of HIV/AID vaccines developed between the Universities of Nairobi and Oxford.

The Plant Breeders' Rights Act was developed because of the demand from the international horticulture industry which was interested in vegetable and flower growing. In other cases Acts have been developed because of importation and exportation of seeds with neighbours or other countries.

Most of the Acts developed are geared towards International standards with little regard to local circumstances. The Acts are also influenced by the outside forces, hence they are inclined to meet the objectives of the outside forces less or none of the objectives of the national country. Similarly, if at all a policy is developed, the same trend is followed targeting the International Standards when majority of farmers, for example, still have their informal seed sector (which is neglected).

Kenya has developed a seed policy and the objectives of the policy aim at addressing or improving the formal seed sector through the private sector. This has been influenced mainly by the seed companies, especially multinationals, represented by Seed Trade Association of Kenya (STAK). In the whole document, there is only one paragraph that talks about informal seed sector and in that paragraph it acknowledges the importance of the informal seed sector since it provides 80% of the national seed requirement. In addition, there is only one policy statement which aims at capacity building within the informal seed sector but does not state how it will be done. The formal seed sector contributes only 20% of the national seed requirement and yet the whole policy is focused on it; and that sector is confined to hybrid maize seed and horticultural seeds only.

To improve quality of seed, generally, efforts must be directed to stimulating the informal seed sector through introduction of new germplasm at various intervals. Therefore focus should be on how to transform the informal seed sector rather than focus on a sector that cannot meet the national seed requirement. Finally, the committees to formulate the policy and develop legal frameworks must be all encompassing; including the civil society, farmers, so that the place for informal seed sector can be considered in such policies and legal frameworks.

What is the Right to Save, Use, Exchange & Sell Farm-saved Seed?

This right relates to the management of farm saved seeds and propagating materials. It formalizes the law of the land that encompasses farmers' management of their seed systems. These customary rights are noted in functional mechanisms and relationships between stakeholders involved in such mechanisms but they are challenged by rather recent regulations such as seed laws and Intellectual Property Rights.

The majority of the genetic diversity maintained on-farm is managed in small scale agriculture in which farmers' seed systems dominate and where the formal seed sector plays a limited and additional role. Farmers' seed systems depend on the free exchange of seeds either through small gifts, barter exchange or trade. This system needs protection from negative impact of regulations designed to promote the formal seed system (like the Kenyan Systems). Such negative impact may stem from agricultural policies (Kenya Seed Policy) and seed laws, environmental policies; regulating access and trade and innovation policies.

Since time in memorial, farmers' seed systems do not only cover traditional land races but also modern varieties developed by scientific plant breeding and modern farmers' varieties. When modern varieties enter the farmers' seed system and seeds are shared among farmers, intellectual property rights may interfere and there is likelihood for the farmers' materials to be eroded as well.

When farmers share their materials across legally defined borders of communities or states, biodiversity laws that limit access to genetic resources may be offended. Hence, there is need for clear direction on how the Farmers' Rights are administered. This still remains a challenge to national governments in Africa.

In addition, modern seed laws often do not take into account important aspects of farmers' seed systems as is illustrated by the occurrence of modern farmers' varieties that may be uniform and clearly distinct from the officially released varieties of the same crop.

Such varieties may result from introgression of genetic material of modern varieties into farmers varieties either or not in the context of participatory plant breeding. In some cases this process erodes the materials of farmers, unless there is a programme to initially collect the farmers' materials and keep in gene banks where their materials are completely eroded, they could fall back to their germplasm kept in the bank.

The Way Forward

It is apparent that most countries in Eastern and Southern Africa are still contemplating on which way to go in terms of seed production and marketing. Most of them are members of WTO-TRIPS except Ethiopia which is just negotiating to be a member. They are also members of the IT-PGRFA and hence they can implement both the Breeders' Rights and Farmers' Rights. They also have the option to go the Sui-generis way for both the Breeders' Rights in UPOV but also focusing on Farmers Rights.

To be objective and addressing the needs of the local farmers, the National Governments should assess both the formal and informal seed sectors before formulating policies and developing legal frameworks for the seed sector. Their national needs should supersede the international forces hence their objectives in policy making or formulation of legal framework should address the desires of the local farmers. This means that the National Governments should support both informal and formal seed sectors with emphasis on integrated seed systems to address the issue of seed quality. However, if the informal seed sector is neglected, the quality will continue to get worse and in the long run, have low productivity as it appears with the current trend in many African countries. The introduction of foundation seed from NARS at regular intervals to the informal seed sector will determine the improvement of agricultural productivity.

Ethiopia is rooted for both Breeders' Rights and Farmers' Rights and there is nothing wrong with other Governments studying the systems and establishing the integrated systems. India has tried this and other countries could learn from their difficulties and benefits before deciding on which way to go. The International Agreements have provided opportunities for national governments to decide based on their local needs.

References

CTA Publication – N.P. Louwaars with G.A.M. Marrewijk – Seed Supply Systems in developing countries.

Government of India, 2002. National Seed Policy.

Government of Tanzania 2002 – Plant Breeders Rights Act.

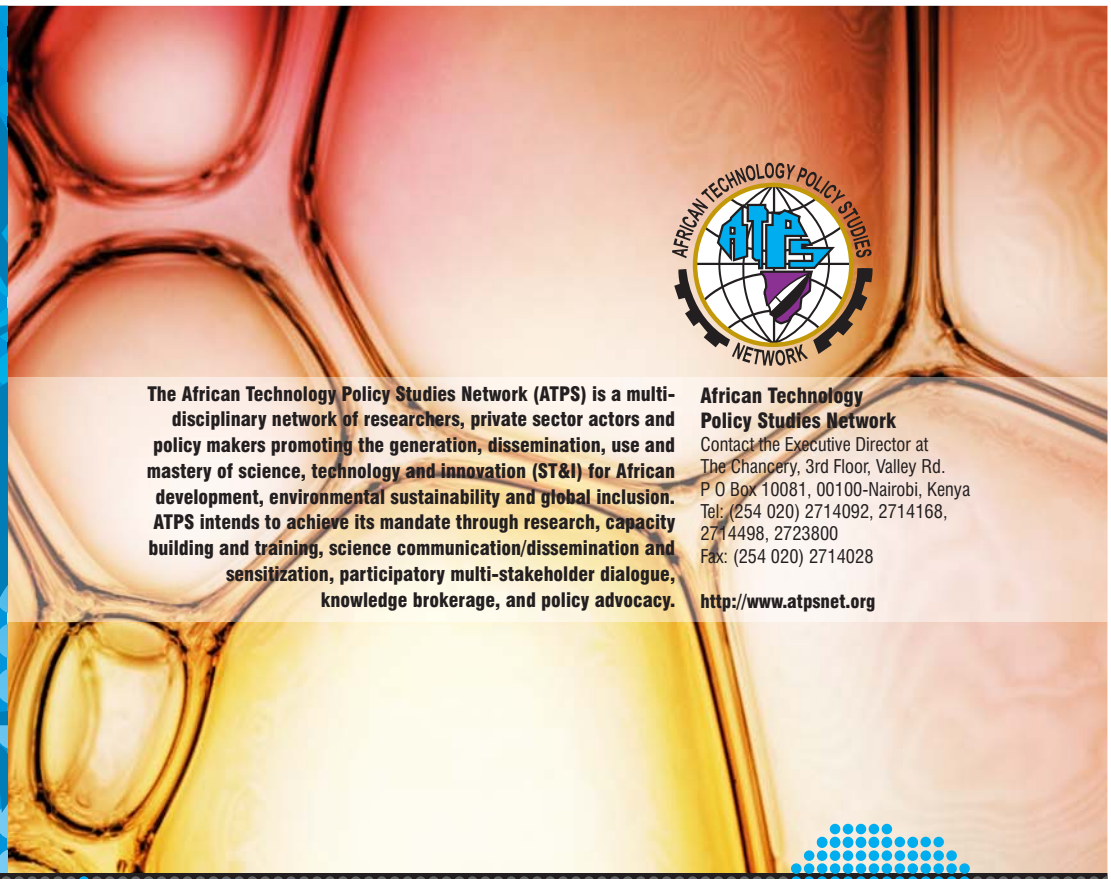
Government of Tanzania 2003. The seeds Act.

Jean Claude Rubyogo, Louise Sperling, Losira Nasirumbi and Sindi Kasambala – Developing seed systems with and for the marginalized: case of common beans in East, Central and Southern Africa.

Lemma Desalegn (Dr). Nigussie Dechassa (Dr.), Niels Louwaars (Dr.), Marya Thiysen (Dr.), Walter de Boef (Dr.) and Joep van den Broek – Concept note on integrated seed sector development.

Niels Louwaars and Bert Visser (2007). Perspectives on Farmers Rights: Consensus reached and challenges remaining during the International Seminar on farmers Rights in the context of Global Regime on Intellectual Property Rights.

Republic of Kenya (2009). National Seed Industry Policy.



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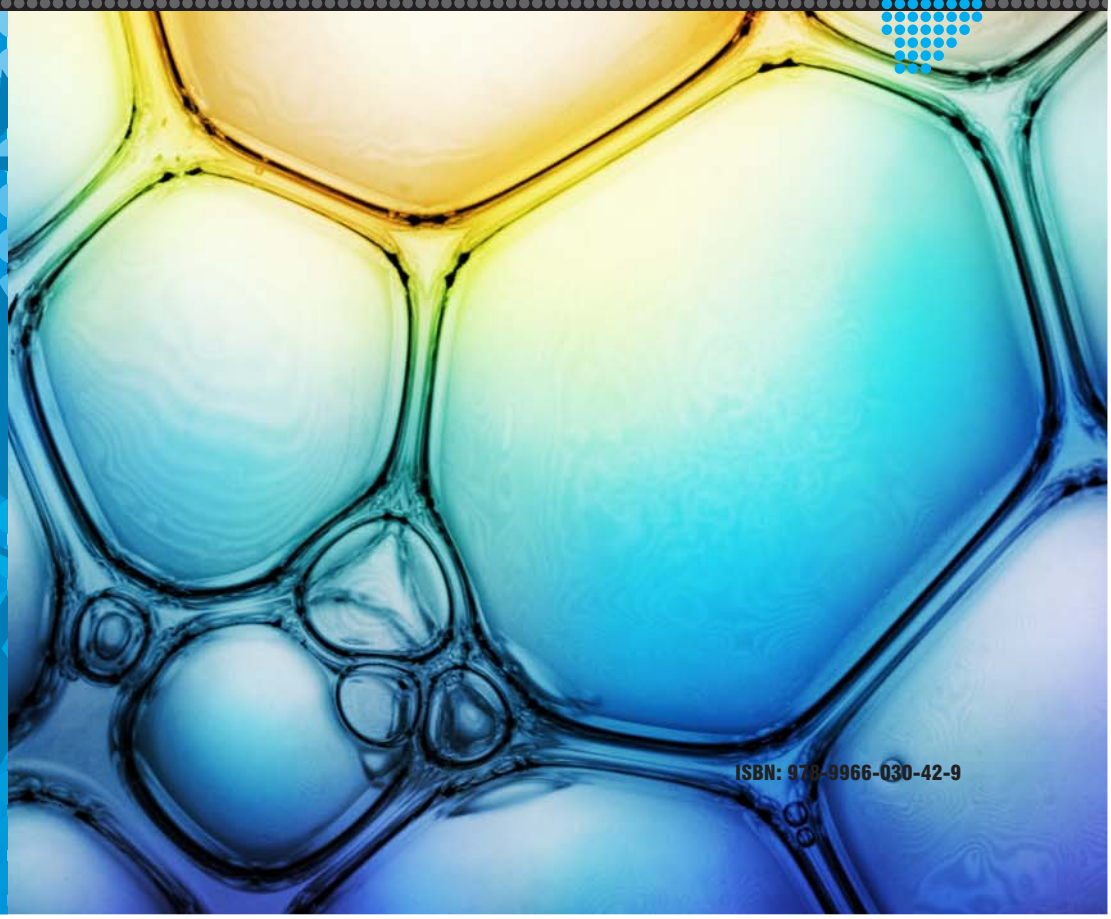

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