The Politics of Agricultural Intellectual Property Protection: The Strange Story of Ghana's PVP Legislation

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Abstract.

The Republic of Ghana has come a long way with its attempts to protect plant breeders' rights, as required by the UPOV-91 Convention and the TRIPS Agreement. The Ghanaian government finally passed the Plant Variety Protection (PVP) Act of 2020 after other attempts in previous years were unsuccessful. The Plant Breeders' Bill of 2013 was the country's first attempt at protecting breeders' rights; however, the bill generated a huge controversy and a series of protests in the country, as many stakeholders were not in favour of its provisions. Consequently, the bill was suspended from parliament for further consultations to be made, and there it remained until the Plant Variety Protection Bill was introduced and passed in 2020 after a change in government in 2016. Interestingly, the opposers of the 2013 bill, again, have made several attempts to stop the passage of the new legislation, claiming that the new legislation is merely a reproduction and renaming of the 2013 bill and does not address their previous concerns. One of the main concerns of the opposition is that the legislation has very rigid requirements which do not serve the interests of Ghanaian farmers and the agricultural industry.

After a thorough analysis of the PVP Act of 2020, the TRIPS Agreement, the UPOV-91 Convention, and the arguments advanced by both factions, this paper strongly argues that the inflexible requirements of the TRIPS Agreement and the UPOV-91 Convention—the source of the PVP legislation—is the main cause of this conflict.

Keywords: Intellectual property rights, plant breeders' rights, Ghana, Plant Variety Protection Act, Plant Breeders' Bill, UPOV-91, TRIPS, WTO, Food Sovereignty Ghana

List of Abbreviations.

FSG	Food Sovereignty Ghana
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
IP	Intellectual Property
IPR	Intellectual Property Rights
PBB	Plant Breeders' Bill
PVP	Plant Variety Protection
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UPOV	International Union for the Protection of New Varieties of Plants
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Contents

1.0. INTRODUCTION.

During the early 2000s, there was a growing emphasis on enhancing Intellectual Property Rights (IPRs) in plant breeding within developing nations, such as Ghana. The agreement of the Trade-Related Aspects of Intellectual Property Rights (TRIPS), established by the World Trade Organization (WTO) in 1994, advanced this agenda (Bortey & Mpanju, 2016). Requiring compliance from the contracting parties (member states), this agreement, in theory, forces them to provide a specified level of protection for patented plant varieties within their national legislative frameworks (ibid.). WTO members were thus required to protect the intellectual property of any firms that sought patent protection under these domestic regimes – the days of freely copying agricultural technology claimed to have been developed by others were to come to an end.

In Ghana, successive governments have made efforts to incorporate Intellectual Property protection mechanisms into its domestic legal framework—for instance, the passage of the Biosafety Law in 2011 (Amanor, 2015; Rock & Schurman, 2020; Rodriguez & Lee, 2015), the Patent Act of 2003, the Public Health Act 851 of 2012, and the Trademarks Act 664 of 2000, just to mention a few—which will be covered extensively from section 1.5.1 to 1.5.4. As a requirement of Ghana's desire to join the International Union for the Protection of New Varieties of Plants (UPOV-91), it also had to introduce a Plant Variety Protection (PVP) system into its national legislation to protect the rights and inventions of plant breeders (Bortey & Mpanju, 2016). Consequently, the Ghanaian government managed to pass the Plant Variety Protection (PVP) Act of 2020 after seven years of battling strong opposition from several groups in the country. Indeed, the struggle to implement a PVP system, a long-running parliamentary standoff and the level of political controversy surrounding it all highlight the extent to which the global intellectual property protection regime is imposed on states in the global south.

Ghana's attempt to introduce a PVP system started in 2013 with the introduction of the Plant Breeders' Bill (PBB). This generated considerable domestic political controversy – obscure patent protection regimes rarely attract such scrutiny. The legislation attracted serious criticism and protests from civil society groups, pressure groups, and the general public. The pressure and momentum of opposition to the legislation became overwhelming, ultimately compelling the Speaker of Ghana's fourth Parliament, Rt. Hon. Edward Doe Adjaho to withdraw the Bill, which had advanced to the consideration stage of legislative enactment (Food Sovereignty Ghana, 2020; Oguamanam, 2015). The speaker referred the Bill to a parliamentary select committee for further deliberations with the various stakeholders to address the concerns raised by civil society groups.[1] However, for seven years, the legislation languished. Between 2013 and 2020, there were few meetings between stakeholders and the committee in charge of the Bill, but discussions seemed to have halted, especially after a change of government in 2016.

In 2020, discussions around the Bill and its possible reintroduction into parliament resurfaced as the government organized some "sensitization workshops" on the importance of the PBB (Food Sovereignty Ghana, 2020). Organized by government representatives to "demystify" the controversies around the Bill, the sensitization workshops were designed to increase support from farmers for its reintroduction into parliament. According to a report by Food Sovereignty Ghana (FSG),[2] which is the main opposition to the passage of the Bill, the workshops were done quietly, with farmers in lecture-style settings (no room was allowed for questions and inputs from participants), and opposition groups were excluded. Following this process, the Bill was

[1] See column written by Food Sovereignty Ghana on Ghanaweb: https://www.ghanaweb.com/GhanaHomePage/features/Investigate-Bagbin-Over-Plant-Breeders-Bill-335602
[2] See report at https://www.modernghana.com/news/1019682/the-obnoxious-plant-breeders-bill-is-back-to-parl.html#google_vignette

reintroduced to parliament; renamed as the "Plant Variety Protection Bill" (Parliament of Ghana, 2020). The Bill was then hurriedly passed by parliament, considering that the Bill was not new to parliament and with the assurance that the necessary consultations had been done (ibid.)

Interestingly, the opponents of the PBB, again raised opposition against the new PVP legislation, explaining that it was only a "change in title" without any changes made to the content of the document (PFAG, 2020). This implies that the reasons for their criticisms and protest against the old Plant Breeders' Bill still stood, and the fight against this PVP still lingers on, as the opponents continue to campaign against the legislation and have sought to pursue the case in court. Nonetheless, twenty-six years after the creation of the TRIPS agreement, at considerable cost to the government, Ghana has a system of agricultural patent protection.

Much can be learned from this story. Ghana is not the only developing country to struggle with bringing domestic legal regimes into compliance with the WTO, but it is a uniquely challenging case. For a variety of reasons relating to the historical political economy of Ghanian agriculture, the move to a global system of intellectual property protection was always going to be politically difficult, raising serious concerns for farmers. The creation of global trade regimes is a top-down process imposing economic and political costs on states like Ghana.

1.1. THE PLANT VARIETY PROTECTION ACT, 2020.

The Plant Variety Protection (PVP) Act of 2020 functions as an intellectual property rights instrument designed to institute a legal framework safeguarding the rights of "plant breeders" – those that create new, patentable agricultural products (generally, genetically-modified plant varieties sold in the form of seeds). Its primary objective is to establish a system that not only protects plant breeders but also establishes mechanisms for rewarding their efforts. The

overarching goal is to foster and encourage investment in plant breeding activities, contributing to agricultural development and ensuring food security within the country (WIPO, 2020). Streamlining the introduction of genetically modified organisms (GMOs) and associated research endeavours in Ghana, proponents expect that this system will ultimately provide farmers with access to a superior range of seeds at cost-effective prices, thereby enhancing agricultural productivity (WIPO, 2020).

1.2. THE CONTROVERSY SURROUNDING PLANT BREEDER PROTECTION.

From the introduction of the PBB to the current PVP Act of 2020, Food Sovereignty Ghana (FSG), a non-governmental organization, the Convention People's Party (CPP), and the Peasant Farmers' Association of Ghana, have been the most vocal opposition (Rodriguez & Lee, 2016). These groups have had the main objective of compelling the government to adopt more flexible legislation which would protect the interests of smallholder farmers and plant breeders and improve the country's agricultural sector in other ways. In 2013, they called for the substitution of the Plant Breeders' Bill with a more comprehensive document designed to unequivocally safeguard the rights of all farmers to "preserve, exchange, and cultivate seeds" (Rock, 2018). The opposition presented concerns about farmers' rights, sovereignty, bio-piracy, indigenous seeds and security access, and historical precedents where similar practices to those proposed in the legislation had worked out badly for Ghana.

Simply, the opposition argued that the legislation (in its various incarnations) largely served the interests of private and foreign firms rather than the needs of local farmers and the Ghanaian agricultural industry. This is because "patenting conditionalities" (Section 3 in the legislation) limit

patent protection to only those innovations that are “new, distinct, uniform, and stable”. These rules do not favour the style of agricultural innovation in Ghana, thus rendering most existing crop varieties non-patentable. As will be discussed further in Chapter 3, the non-patentability of existing crop varieties could result in biopiracy, extinction of indigenous non-commercial crop varieties, and a potential overtake of the agricultural system by foreign firms.

On the other hand, the proponents of the legislation—including the government and foreign seed companies—argued that it would benefit breeders’ intellectual property in the biotechnology industry. They also argue that farmers would then have access to higher quality seeds at more affordable prices because breeders would have a greater incentive to innovate in Ghanian agriculture. These arguments for and against the PVP Act will be covered in more detail in Chapter 5.

1.3. TRIPS AND THE WTO.

The history of TRIPS and the WTO can be well traced to the General Agreement on Tariffs and Trade (GATT) of the 1940s (Shukla, 2000). GATT was supposed to be a temporary round of meetings that would eventually lead to the creation of the International Trade Organization (ITO) by the end of the Havana Charter; however, the ITO never materialized (ibid.). The idea of TRIPS first surfaced in 1986 during the Uruguay Round of the GATT. (Shukla, 2000). This idea was fueled by a coalition that consisted of American, European, and Japanese drug and pharmaceutical industries (Shukla, 2000). Their main objective was to compel governments worldwide to adopt high standards of intellectual property protection and facilitate its enforcement under a new World Trade Organization that would supersede the GATT. Neither the existing GATT system nor the World Intellectual Property Organization (WIPO) had “teeth” that gave these industries the legal

protections that they wanted (Shukla, 2000). At the time, copying intellectual property patented in other jurisdictions was relatively common, and these industries argued that they were being robbed of their technological and copyrighted innovations, especially in the agricultural and pharmaceutical sectors (Mukherjee, 2023). India, Brazil, South Korea, and Argentina were the main targets at the time (Shukla, 2000; Mukherjee, 2023). Cottier (2015) explained that this push to introduce TRIPS to GATT was further necessitated by the geopolitical changes which took place after 1989, especially after the collapse of the Berlin Wall and the demise of the Soviet Union. According to him, this forced countries to resort to market economy liberalization strategies to attract foreign direct investment (ibid.). The shift towards the embrace of globalization meant that states seeking investment were now under more pressure to give multinational corporations the legal and political protections that they wanted.

Although a few countries were the main targets, most developing countries were equally unhappy about the intellectual property agenda and joined forces to oppose it; it was widely seen as something that served the interests of only the world's wealthiest firms and states. Developing countries such as India, Brazil, Argentina, Cuba, Egypt, Nicaragua, Nigeria, Peru, Tanzania, and Yugoslavia formed a coalition to oppose the agenda at the GATT, arguing that it was a challenge to their economic sovereignty and an affront to the welfare of their people and their development (Shukla, 2000; Mukherjee, 2023). While initially, the likelihood of some sort of binding TRIPS system seemed unlikely during the Uruguay Round, by 1988, it was solidly on the agenda (Shukla, 2000).

The US played a very instrumental role in this process. Because of how keen they were on the issue of TRIPS, the US was the "home base" of many of the key multinationals producing patentable intellectual property; the US applied its special 301 policy to force those countries that

opposed TRIPS to succumb to its pressure (Watal, 2011; Mukherjee, 2023). The US entered into bilateral trade agreements with countries such as Brazil, India, and South Korea for example, who were the main forces opposing the motion to incorporate TRIPS into GATT (Shukla, 2000), getting them to change their intellectual property regimes in ways that suited US interests (Mukherjee, 2023). The message was clear – that states should accept a global TRIPS system, or they would get one managed by the US.

Also, by this time, as Otten (2015) puts it, developing countries began to see the "potential rewards" of TRIPS in areas such as agriculture and textiles. Consequently, some of them—particularly the export-oriented—began to shift towards support for the TRIPS agenda. The US seized the advantage of the weakened TRIPS opposition and moved to include it in the final agreement at the Uruguay Round.

A draft final act was presented by Arthur Dunkel, who was the director-general of the General Agreement on Trade and Tariffs (GATT), in 1991, which contained proposals to create what would eventually be called the World Trade Organization—and also included the TRIPS agreement (GATT Secretariat, 1991). This draft, which became known as the Dunkel Draft Text, was later approved and adopted by the ministers at Marrakesh in 1994 (ibid.).

In contrast to the General Agreement on Tariffs and Trade (GATT), the World Trade Organization (WTO) framework transcends its predecessor by not solely limiting its scope to cross-border transactions involving tangible goods. Presently, the WTO encompasses transactions involving intangible entities, specifically services, making enforcement of TRIPS possible. Additionally, it delineates the criteria governing the admissibility of policies and practices that have the potential to limit the production or trade alternatives available to investors (Shukla, 2000). The WTO requires members to accord equal treatment to all members and promotes transparency and

collaboration among members (WTO, 2001). While this provides developing countries the opportunity to access foreign markets and gain assistance from developed countries through collaborations on developmental projects and investment, it comes with a cost. After the Uruguay Round, developing countries were legally obliged to reconfigure their domestic economic policies in ways that were more consistent with the global neo-liberalism promoted by multinational corporations and the governments of states in the North. The TRIPS Agreement was a key site of this changing relationship.

TRIPS establishes minimal national standards for the protection accorded to creators of intellectual property across industries. It encompasses copyright and related rights, trademarks and geographical indications, industrial designs, patents and plant variety protection (or PVP), layout designs of integrated circuits, protection of undisclosed information and control of anti-competitive practices in contractual licenses (Sahai, 2000). In practice, corporations, or "creators" of new intellectual property (it is always corporations) in the TRIPS system have to seek patent protection in each member state individually, or at least in those states where there is the potential for their intellectual property to be meaningfully copied and pursued economically.

In turn, to ensure the availability of the system of protection, developing countries were given a period of 10 years to incorporate TRIPS into their national legislation, while all other countries were required to do the same after a year (Mukherjee, 2023).

1.4. THE POLITICS OF TRIPS.

Following the passage of the TRIPS Agreement, the international scene became very active, with heavy and commercial intellectual property (IP) producing states trying to protect their interests. Highly developed states tried to protect their interests in IP by getting less developed countries to

follow the provisions of the TRIPS Agreement. They sometimes employed controversial and unconventional methods to achieve this purpose. Sometimes, less developed countries were compelled to do things outside the remit of the TRIPS provisions through bilateral trade agreements and "TRIPS Plus" Treaties. This section will shed more light on Bilateral Trade Agreements and the TRIPS Plus Treaties. It will also highlight how the US and the European Union used them to their advantage.

1.4.1. Bilateral Trade Agreements and TRIPS Plus Treaties.

Brazil and India were historically among the developing countries that opposed the introduction of the TRIPS agreement in the Uruguay Round of GATT and have, unsurprisingly, been the main targets of the TRIPS-plus treaties. Brazil is known to have one of the best professional foreign ministries among developing countries, which enables them to deal with the pressure from international bodies (Serrano & Burri, 2019). India also has a very robust generic drug industry, making it very costly for the government to bow to international pressure on IP protection, particularly in relation to the pharmaceutical industry (Serrano & Burri, 2019). Indeed, India was often a major exporter of "generic" copycat pharmaceuticals to other developing countries that lacked the industry to produce low-cost drugs themselves. Amongst the developing countries, these two appear to possess some "clout" and have been able to withstand pressures from international bodies. However, this narrative is a bit shaky because they are likely to follow the example of China, Japan, and South Korea, which switched from opposing the system to becoming proponents (Serrano & Burri, 2019).

It is not difficult to see what has happened to other developing countries that do not have the ability to face international pressure, particularly when dealing with the US. Access to the US market is crucial in the WTO system. The US has used its power, which comes from other country's desire

to export to the US market, to force intellectual property requirements into agreements with individual states. For example, this was done in the case of Jordan in 2000 (Drahos, 2002). Sometimes, the US literally coerces developing countries to alter their laws, disregarding their discretion and right to benefit from the flexibilities provided by the TRIPS system (Article 6 in particular), such as parallel importation.

Pretorius (2002) narrates the story of South Africa, where the US compelled them to alter their Medicines Act before they could access essential medicines at affordable prices. In 1997, there was an outbreak of HIV/AIDS, tuberculosis and malaria in South Africa; meanwhile, the cost of medicines was extremely unaffordable. For instance, HIV/AIDS drugs costed a patient about $12,000 a year (Pretorius, 2002), which was not affordable for the average South African. To address this issue, the South African government adopted the Medicines Act, which enabled the country to import (through "parallel importation") HIV/AIDS drugs from other countries that produced and sold them at very low prices and made them accessible to citizens. The US government was strongly against this Medicines Act and forced the South African government to change section 15(c) of the law, which enabled parallel importation (Pretorius, 2002). It took overwhelming criticism and disapproval from the international community to compel the US government to relent on its decision, which it only did rather reluctantly. To put it bluntly, the US understanding of the TRIPS system was that if people could not afford patent-protected medications, people should die – this was a focusing event for global debate about who was "winning" and who was "losing" as a result of the creation of TRIPS.

Building on pressure from South Africa, developing countries and other international supporters later forced the WTO into the Doha Declaration of 2001, making it lawful to implement measures

to improve access to essential medicines while complying with TRIPS (Abbott & Reichman, 2007).

Regardless, through bilateral trade negotiations, the US has forced developing countries to adopt stronger Intellectual Property laws, specifically UPOV-91-compliant PBR laws. For parochial reasons, the US and the developed world have pushed an agenda to make the UPOV-91 the only *sui generis* system, even though its requirements do not favour developing countries (Oguamanam, 2015; Sahai, 2000). The constant pressure from the developed world, despite the presence of other *sui generis* systems such as the African Model Law (Ekpere, 2003), the Utility Model (Kim, Lee, Park, & Choo, 2012), CoFaB (Sahai, 2000) among others—that have more favourable provisions for developing countries means that the implementation of TRIPS often seems to maximise the privileges of the global north and prevent the global south from being successful competitors (Khor, 2002).

The United States has not been alone, as the European Union has also been involved in the use of TRIPS-plus treaties, which exceed the minimum requirements of the TRIPS agreement (Pretorius, 2002; Mercurio, 2006). The European Union has often been a tacit beneficiary of US demands in intellectual property matters. However, in finalizing bilateral intellectual property agreements with developing nations after the initial involvement of US negotiators, the EU has done similar things (Drahos, 2002). Together, the European Union (EU) and the United States (US) seem to have effectively cultivated an atmosphere characterized by fear and intimidation, employing covertly benevolent channels and administering a combination of incentives and punishments (Oguamanam, 2015). A typical example of this can cited of how the United States' success in pushing for the Central America Free Trade Agreement (CAFTA) with Central American nations

in 2005[3] served as a precedence for the European Union's CARIFORUM Economic Partnership Agreement later in 2008. Both agreements employed TRIPS-Plus tactics such as extending patent protection periods, which is way beyond the requirements of the TRIPS Agreement.

The bottom line is that the power granted to Intellectual Property holders, like large agricultural companies or those in the pharmaceutical sector, has been multiplied due to the nature of trading in this highly globalised system. With the advent of TRIPS, patent holders have become aggressive in their dealings with developing countries. For instance, Khor (2002) provides an example where a transnational company holding a patent for Chlorofluorocarbons (CFC) quoted a price higher than the market price and added two conditionalities in which it—the patent holder—would have a majority share in the Indian firm producing the product or compel the firm to reduce its exports. This illustrates how patent holders from developed countries weaponize their Intellectual Properties against the developing countries. This prevents or slows innovation, which engenders unending dependency on innovations and technology from developed countries, as well as the treatment accompanying it.

1.5. UNIQUE ASPECTS OF GHANA'S CASE.

Following the introduction of the TRIPS agreement, member states of the WTO are obligated to incorporate the tenets of the TRIPS agreements in their national legislation. Ghana, being a member of GATT since its independence in 1957 and automatically a member of the WTO in 1995

[3] See Public Citizen report at: https://www.citizen.org/article/central-america-free-trade-agreement-cafta/

(De Beukelaer & Fredriksson, 2018), is also required to comply with TRIPS. It is worth noting that developing countries such as Ghana were given a grace period of about ten years to fully incorporate the tenets of the TRIPS agreement into the national legislation (Mukherjee, 2023).

Before the TRIPS agreement, Ghana already had Intellectual Property laws such as the PNDC law 110, which covered maps, architectural models, photographs, diagrams, works of applied arts such as handicrafts and jewellery, sculptures, literary works, programme carrying signals, choreographic works, etc. (Wakhungu, Sikoyo, & Nyukuri, 2006). However, to comply with the TRIPS agreement, the legislature had to enact new laws and expand or update existing laws. Ghana's government initially made serious efforts to do this.

1.5.1. The Patent Act of 2003.

The enactment of the Patent Act of 2003 marked a significant legislative development aimed at replacing its predecessor, the Patent Law of 1992. This was part of the nation's commitment to adhere to the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement established by the World Trade Organization (WTO).[4] Serving as the primary framework governing patent rights within the jurisdiction, the Patent Act of 2003 aligns with the provisions outlined in the TRIPS agreement. However, it encompasses various mechanisms, including but not limited to parallel importation and compulsory licensing, designed to ensure patent protection flexibilities in Ghana (Kuudogrme, 2018). Notably, the evolution of intellectual property legislation in the jurisdiction traces back to the inception of the Patents Ordinance of 1899 (Manteaw, 2008-2010), modelled after the British legal system. Subsequent iterations, such as the Patents Registration

[4] Ghana's Patent Act of 2003

Ordinance of 1925 (Wakhungu, Sikoyo, & Nyukuri, 2006), and the Patent Registration Decree of 1972 (ibid), paved the way for the eventual establishment of the Patent Law of 1992.[5] The transition to the Patent Act of 2003 represents a progressive refinement of these antecedent legal frameworks.

The current Patent Act of 2003 is supported by the Patent Regulations, a Legislative Instrument that addresses issues around the application, cost, examination of patents, maintenance, and other matters relating to the patent (Kuudogrme, 2018).

1.5.2. Public Health Act 851 of 2012.

This Act was introduced with the aim of integrating certain provisions of the TRIPS agreement, but again, notably embraces flexibilities such as allowing for parallel importation. By incorporating parallel importation, the legislation seeks to streamline the importation process of pharmaceuticals, thereby promoting accessibility and affordability of essential drugs within the country's borders, all while ensuring compliance with the stipulations outlined in the TRIPS agreement (Kuudogrme, 2018).

1.5.3. Protection against Unfair Competition (PUC) Act 589 of 2000.

The introduction of this Act, ostensibly self-explanatory in its purpose, was intended to safeguard pharmaceutical enterprises from undue competition within their sector (Kuudogrme, 2018). Through its provisions, the Act seeks to establish a regulatory framework that ensures a level playing field for pharmaceutical companies, shielding them from practices that may undermine

[5] Ghana Patent Law PNDCL 305A of 1992.

their commercial viability or impede their ability to realise the full potential of their intellectual property assets.

1.5.4. Trademarks Act 664 of 2000.

In adherence to the provisions delineated in the TRIPS agreement, the Trademarks Act is also structured in a way that enables the importation of generic pharmaceuticals from foreign jurisdictions. The Trademarks Act may mandate certain distinctive features such as unique colouring, packaging, or shaping of these products to distinguish these generic drugs from their counterparts already present in the market. This regulatory approach is designed to uphold the integrity of trademark rights while simultaneously fostering the importation and accessibility of generic medications, thereby promoting competition and ensuring compliance with international trade obligations outlined in the TRIPS agreement (Kuudogrme, 2018).

All of these pieces of legislation represent efforts by the government of Ghana to bring domestic law into compliance with WTO TRIPS requirements, but in ways that often seek to maximize the allowable flexibility for Ghana to pursue domestic policy goals, albeit most of them are centred on health and medicines.

However, a broad opposition emerged to the PVP and the WTO's system of agricultural IPO protection – this thesis explores that case. Why did the "wheels fall off" Ghana's process of TRIPS implementation for seven years, and why has the ride been so "bumpy" after its implementation? What is it about the politics of agriculture in Ghana that has made the protection of plant breeders' rights a very thorny situation? And what lessons can be learned for other cases throughout the global south where there is similar opposition?

This thesis argues that the controversy about the Plant Variety Protection legislation in Ghana and the seven-year delay in its passage is a result of the inherent inflexibilities in the TRIPS agreement and the UPOV-91 Convention alike that threatened to clash with the basic political economy of agricultural production in Ghana.

1.6. CONCLUSION AND LAYOUT.

In 2013, the Plant Breeders' Bill was introduced into the parliament of Ghana because Ghana wanted to join the International Union for the Protection of New Varieties of Plants (UPOV), which requires members to have some level of plant variety protection in domestic law (Bortey & Mpanju, 2016). The supporters of the Bill justified joining the UPOV and the passage of the Plant Breeders' Bill, stating that the county would benefit from improved plant variety protection, access to new plant varieties, improved international trade, and capacity building. On the contrary, groups such as the FSG, CPP, and the Farmers' Association of Ghana—who have been the most vocal opposition to the Bill (Rodriguez & Lee, 2016)—disagreed with this justification for a number of reasons. The opposition presented concerns about the Bill's adverse implications for farmers' rights, policy sovereignty, possible bio-piracy, threat to indigenous seeds, and bad historical precedents of similar regulations. The opposition to the Bill gained public attention, even in the form of protests. The passage of the Bill stalled for seven years and was only passed in 2020—rather forcefully, with the views and concerns of stakeholders not considered.

While the Ghanaian Parliament has demonstrated relative efficiency in enacting new legislation and amending existing laws concerning medicine and health in alignment with the TRIPS agreement, the legislative process concerning both the former Plant Breeders' Bill and the current Plant Variety Protection Act faced serious opposition and criticism. This is because both documents

have very intricate implications for a vital sector of the nation's economy—agriculture. Agriculture serves as the cornerstone of the Ghanaian economy, employing approximately 45.38% of the population as of 2013 (Statista, 2023). Given its pivotal role, any legislation impacting agriculture resonates directly with the broader economic landscape of the country.

The back and forth on the PVP legislation process raises questions about the extent to which international trade and intellectual property rules accommodate the policy space, development priorities, and socio-economic realities of developing countries. It also highlights the complexity of sustainable development and the trade-offs involved in balancing competing interests and objectives, particularly in a globalized world characterized by diverse and often conflicting priorities. This thesis posits that the division of public opinion over the PVP legislation is a result of the inherent inflexibilities within the TRIPs Agreement and the PBR provisions of the UPOV-91 Convention.

The second chapter of this study entails a review of literature encompassing various perspectives on Intellectual Property Rights (IPRs), the level of State sovereignty and the quality of policy formulation and implementation within the TRIPS framework by member states.

Subsequently, the third chapter will thoroughly examine the TRIPS Agreement and the Plant Variety Protection (PVP) regime established under the UPOV-91 Convention. This analysis will be contextualized within the framework of the Ghanaian Plant Variety Protection (PVP) Act, drawing parallels and distinctions between the provisions of both agreements in comparison with the proposed PVP Legislation.

The fourth chapter will discuss the nature of agriculture in Ghana and demonstrate how the Plant Variety Protection Act and its inherent rigidities are incompatible with the country's system of agriculture.

The fifth chapter will tell the story of how the Ghanaian government managed to pass the Plant Variety Protection Act after seven years of delay in more detail. It will also lay out the arguments advanced by the promoters and opposers of the PVP legislation.

Finally, the sixth chapter will discuss the main findings of the research and make some recommendations.

2.0. LITERATURE REVIEW.

This chapter reviews the diverse viewpoints on Intellectual Property Rights (IPRs) and their protection. It delves into the scholarly discourse surrounding the multifaceted dimensions of IPRs, encompassing both orthodox perspectives that advocate for IPRs and critical viewpoints that critique IPRs. Furthermore, the chapter explores debates over the extent to which World Trade Organization member states exercise sovereignty in shaping their intellectual property policies and the challenges they encounter in navigating the TRIPS framework. Additionally, the literature review addresses the quality of policy formulation and implementation processes, shedding light on the complexities and nuances inherent in translating international IP norms into domestic legislation and regulatory frameworks. Despite these multiple levels of debate about intellectual property protection, debates, much of the literature suggests that the TRIPS regime largely favours the interests of the few powerful counties in the global system.

2.1. PERSPECTIVES ON IPRs AND TRIPS.

Ghana's Plant Variety Protection (PVP) Act emanates from the UPOV-91 Convention, which, in turn, complies with the provisions of the TRIPS agreement. Owing to this, it can be argued that the TRIPS Agreement cannot be absolved from the controversies and debates surrounding the introduction and passage of the PVP Act by the Ghanaian parliament – the struggle is the "grassroots" manifestation of what the TRIPS process imposes at the global level.

Similar to the opposing views and debates in the Ghanaian case, wider debates and perspectives on the TRIPS Agreement and its implementation exist internationally. One area of contention revolves around the economic implications of Intellectual Property Rights (IPR) protection,

sparking debates about its benefits or drawbacks within economic theory. There is considerable disagreement over whether intellectual property protection is "good" or not. Additionally, discourse extends to the broader question of whether the TRIPS agreement serves as a catalyst or impediment to economic development within less developed countries – there are a range of opinions. Furthermore, discussions surrounding the efficacy of IPRs delve into whether they yield the intended outcomes envisioned by their architects. Positive perspectives on IPR protection will be categorised as the "orthodox" viewpoints, which espouse conventional understandings of IPRs juxtaposed against more "critical" viewpoints that challenge established paradigms.

2.1.1. Orthodox Perspectives.

This paper explains orthodox or positive perspectives on intellectual property rights as those viewpoints that describe intellectual property rights as beneficial to society. Positive perspectives have come from people such as Cornish (1989), who simply explained IP rights as a legal framework for protecting intellectual property. Other authors, such as Boyle and Jenkins (2014), add that IP rights protect or safeguard intangible assets, such as inventions, literary works, and artistic creations, from unauthorised use or exploitation. Scotchmer (2004) and Towse (2001) are somewhat optimistic and describe IP rights as incentives for individuals and organisations that help foster innovation and creativity. Furthermore, authors such as Vaidhyanathan (2017) and Chisum et al. (2015) explain that IP rights help strike a perfect balance between rights and public interest, ensuring that creators benefit from innovations and that the public also enjoys using such intellectual creations. Hunter (2016) argues that despite the misconception about IP holders benefitting most from IP protection, the opposite is true. He makes the case that over the years, consumers have benefitted more, citing examples of Henry Ford reducing the price of new cars between 1921 and 1925 due to manufacturing breakthroughs (Bhide, 2015), and the benefits

enjoyed by consumers from pharmaceutical products, especially HIV drugs, since the 1990s (see also Philipson & Jena, 2006) and how consumers have benefitted from the internet and search engines such as Google rather than wasting time and money at libraries (Hunter, 2016).

Moreover, proponents of the orthodox perspective argue that intellectual property regimes in practice are able to strike a balance between both innovators and the public interests because aside from the many benefits that consumers gain, these legal protections usually have a limited number of years after which the protection is lifted. For instance, the TRIPS Agreement and the UPOV-91 Convention protect plant varieties for 20 years (UPOV, 1991; WTO, 2000), after which the protection is lifted for free usage by anyone who may benefit from that innovation.

These positive views paint a desirable picture of intellectual property rights and laws in general. These perspectives are in line with the views held by the government and the supporters of the Plant Variety Protection Act in Ghana.

2.1.2. Critical Perspectives.

Others hold rather critical perspectives and opinions about IP rights. In this paper, critical perspectives are explained as those viewpoints that critique or challenge orthodox views on intellectual property rights issues. Generally, critical perspectives frame IPR as beneficial to only a few states or entities operating in the international system. In this line of thinking, mention can be made of authors such as Lessig (2004) and Boyle (2008), who described intellectual property rights and laws as means of legalising monopolies. This perspective suggests that IP rights confer, to their holders, exclusive rights over intangible assets, creating legalised monopolies that foil competition and innovation. Positive or Orthodox perspectives on IPRs have argued that IPR laws offer the best antidote to the market failure situation where owners of intellectual property gain

nothing in return for their work; however, the solution leads to a problem of monopoly, which is another form of market failure (Singh, 2002; Adkisson, 2004). Singh adds that the monopoly of ideas is worse than the monopoly of consumer commodities because the former impacts the lives of future generations (ibid.). Additionally, authors such as Shiva (1997) and Vaidhyanathan (2001) see intellectual property rights and laws as tools of cultural appropriation, enabling dominant cultures or entities to exploit and profit from the cultural heritage and knowledge of marginalised communities. For instance, Oguamanam (2015) has raised concerns about how the inflexibilities of some provisions of the UPOV-91 Convention—which mirrors the TRIPS Agreement—have rendered a lot of indigenous crop varieties from developing states as non-patentable, making way for biopiracy and misappropriation of indigenous biotechnology.

Finally, authors such as Sell (2003) and Drahos and Braithwaite (2002) view IP rights as instruments that perpetuate economic imperialism by imposing Western-centric legal frameworks on developing countries, often resulting in the detriment of local economies and traditional knowledge systems. Similarly, there have been perspectives describing IP rights as commodifying ideas and turning creativity and innovation into marketable products, reinforcing a capitalist system of prioritising profit over societal well-being (Klein, 1999). Adding to this, although Adkisson (2004) acknowledged the importance of IPR to innovation and creativity, he lamented that it is gradually being regarded as “the” method to foster innovation to the neglect of other market-oriented means, which could lead to an era of commodification and amplify the ills of capitalism (Perelman, 2003).

Clearly, the critical perspectives are a direct attack on the positive or orthodox line of arguments, and interestingly, they are not too different from the views held by the opponents of the Plant Variety Protection Act, such as the Food Sovereignty Ghana (FSG), the Convention People's Party

(CPP), and the Farmers' Association of Ghana. Both positive and negative perspectives provide or add more context to understanding the views advanced by the various factions of the PVP debate in Ghana.

2.2. POLICY MAKING AND SOVEREIGNTY.

Amidst the discussions around the Plant Variety Protection Act in Ghana, there have been concerns about whose interests are actually being met and whether the country is entirely in control of the policy and ready for its implications. This section aims to highlight the extent of sovereignty afforded to developing countries in formulating intellectual property policies, particularly in light of the dominance exerted by leading industrialised economies at the global level. The discussion will first delve into the dichotomy between "Policy Takers" and "Policy Makers," delineating the varying degrees of sovereignty typically afforded to developing countries in their engagement with IP regimes and the formulation of related policies. This sheds light on power dynamics and policy autonomy, highlighting the challenges and opportunities developing nations encounter in navigating the IP landscape. Furthermore, the section will examine the "Discursive Exercise of Power," highlighting how the institutional framework established by the World Trade Organization's Trade-Related Aspects of Intellectual Property Rights (WTO-TRIPS) agreement shapes and constrains the policy-making endeavours of developing countries.

2.2.1. Policy Takers and Policy Makers.

Due to how the TRIPS agreement was reached, there has always been great disquiet within developing countries, particularly around intellectual property. The pressures and expectations from developed countries have largely shaped the current international system governing intellectual property (Tsioumanis, Mattas, & Tsioumani, 2003), which feeds the fears of

developing countries. Interestingly, Campi and Nuvolari (2021) explain that the recent strengthening and synchronisation of IPRS systems are a product of policies driven by developed countries through the TRIPS agreement and subsequently through the TRIPS-Plus policy, where the US government sometimes demands more than the minimum requirements of the TRIPS Agreement.

Tsioumanis, Mattas, and Tsioumani (2003) argue that intellectual property and its protection give back to developed countries the power they lost after colonisation because patents only became very important with the rise of political independence in the developing world, the waning of plantation economies, and the growth of plant breeding. In support of this assertion, Fowler (1995) also likens the current nature of the intellectual protection regime to the days of colonialism, with the only difference being a shift from a physical to a legal mode of control. The Commission on Intellectual Property Rights (2002) reported that commercial users have overrun the intellectual property protection system to the extent that policies around the subject are determined by a few actors rather than the general public's interest and the common good. The United States and the European Union have been the main beneficiaries of these policies—forcing their interests on other countries through the use of bilateral trade agreements and TRIPS-Plus, which sometimes demands more than the requirements of TRIPS (Helfer, 2004; Drahos, 2001; Dutfield, 2006; West, 2012). Because of this, scholars such as Dutfield (2019) have described developing countries as “policy takers” rather than policymakers when it comes to Intellectual Property Rights, especially in agriculture.

In agriculture, NGOs and representatives of developing countries in the Food and Agriculture Organisation (FAO) have attempted to pursue “Farmers' Rights” to equalise the rather unfair nature of intellectual property rights expressed as “breeders' rights” (MASIPAG, 2002). Farmers were

displeased that breeders and corporations were protected by breeders' rights, which ensured their security and benefited them financially, whereas farmers and indigenous communities did not have any protection (ibid.). Developed countries heavily criticised this move (Correa, 2000; GRAIN, 2000).

2.2.2. Discursive Exercise of Power.

While much of the focus has been on the power or leading states to promote their interests in IPR through direct pressure, in the course of policy formulation, the WTO has also been accused, mainly by developing countries, of promoting the interests of developed countries through its "discursive" exercise of power (Hopf, 1998). As West (2012) pointed out, the WTO's laws are overly normative and lack the flexibility to solve real concrete problems. Coupled with the lack of a global judicial body, the WTO resorts to reifying normative laws to solve concrete problems, which have usually resulted in the categorization of indigenous knowledge protection frameworks in developing nations as inconsistent with how the regime should work, thereby requiring special provisions, transitional periods, and ongoing oversight (West, 2012). Like some other areas of IPE, western ideas about how liberalization should work are the norm; everything else is either protectionism or some sort of cheating. Consequently, even though developing countries have complained about TRIPS and IP laws—which place more importance on the holders of IP and neglect the communities whose forms of knowledge were embodied freely in the making of such IP—the WTO dismisses this (West, 2012). The WTO's attempt to solve concrete problems with discursive power due to its overly normative laws has significantly influenced the quality and sovereignty of IP policies formulated by developing countries.

2.3. COMPLIANCE WITH WTO REQUIREMENTS ON TRIPS.

As explained above, the Plant Variety Protection (PVP) framework outlined in the UPOV-91 Convention directly mirrors the provisions of the TRIPS Agreement. As a result, Ghana's successful enactment and enforcement of the Plant Variety Protection (PVP) Act effectively equate to its adherence to the TRIPS Agreement. However, before the passage of the new PVP Act in 2020, the notable resistance towards the previous Plant Breeders' Bill within the Ghanaian parliament and among various stakeholders since 2013 signalled a deliberate non-compliance to some aspects of the TRIPS Agreement. This resistance, which still lingers on even after the passage of the new PVP Act, underscores the conflict between domestic policy priorities, international obligations, and socio-economic considerations. Interestingly, theoretical perspectives exist that offer insights into the factors influencing states' ease or difficulty in implementing intellectual property rights laws, providing a broader understanding of Ghana's challenges with the PVP Act and its predecessor, the PBB.

2.3.1. Economic Development and IP Protection Levels.

A number of economists, such as Maskus (2000), hold the view that the level of intellectual property protection has a correlation with the economic levels of countries. He explains that states with low incomes and technology will likely have strong IP protection because their desire for protected products and services will attract strict IP protection conditionalities. He argues that middle-income countries are likely to have a weak or permissive level of IP protection because of the need to beat foreign competition. Countries with high incomes and high levels of technology are likely to have very high levels of IP protection to reward IP holders. Filomeno (2013) partly disagrees with this assertion, citing the case of Argentina, which was doing well economically with

high levels of per capita income but very low levels of IP protection. This is supported by Campi and Nuvolari (2020), whose research confirms that there is no correlation between countries' GDP levels and their levels of IP protection. Instead, IP protection is determined by other economic development metrics such as research and development, market freedom, and openness of the economy (Ginarte & Park, 1997).

2.3.2. State Capacity and IP Protection Levels.

Filomeno (2013) posits that the extent of intellectual property (IP) protection is contingent upon a state's capacity in IP governance. According to his analysis, the level of IP protection is influenced by the interplay between citizen demands and the state's capacity to regulate and enforce IP laws. This may result in varying degrees of IP protection, ranging from high to low, depending on the specific circumstances of each state. Filomeno suggests that states with weaker IP governance and research capacities are often subject to stronger demands for IP protection from more developed states. Consequently, these states may adopt stronger IP protections to align with the preferences of powerful states. Conversely, states with robust IP governance capacities but limited research capabilities may opt for lower levels of IP protection, reflecting a prioritisation of other developmental objectives over stringent IP regulation. Moreover, Filomeno highlights that states with high capacities in both IP governance and research are inclined towards stronger IP protection regimes.

2.3.3. Policymaking Structure and IP Protection Levels.

Another explanation is given by Filomeno (2014) that countries that use a corporatist process of IP decision-making are more likely to have weaker IP protection laws, whereas states that use a pluralist or a “state capture and abstention” pattern are more likely to have stronger IP protection

laws. This is because corporatism allows for the participation of different state agencies, interested societal actors, and fewer representatives from the private sector in the IP decision-making process. Consequently, it results in a permissive level of IP protection because it becomes difficult for private individuals or one party to influence the decision. A typical example of the corporatist nature of decision-making in India enabled the government to withstand international pressure on TRIPS agreement flexibility due to heavy criticisms from stakeholders in the pharmaceutical industry (Serrano & Burri, 2019). In contrast, under pluralism or a state capture and abstention, private individuals, firms, or groups are easily able to influence IP decisions because they have very strong informal connections to the government. Filomeno (2014) adds that this situation is more likely to occur when states have weak capacities in policy-making. This is evident in the case of Paraguay, where the concerns of smallholder soy growers were not considered because the IP decisions were made in ad hoc committees and driven by the interests of private investors (ibid.). It is not advisable for IP policies to be limited to IP offices or specific government agencies because it increases the propensity of state capture and abstention by private IP holders (Deere, 2009; Latif, 2005).

From the theoretical perspectives highlighted above, Ghana's approach and posture exhibit notable parallels with Filomeno's (2014) theory regarding the nexus between a country's policy-making structure and the formulation of IP protection laws. With the suspension of the first Plant Breeders' Bill (PBB), the government at the time employed a corporatist decision-making style, as identified in Filomeno's framework. This is because discussions around the PBB welcomed input and participation from diverse state agencies, interest groups, and the private sector. This is contrary to the state capture or abstention style, which characterized the passage of the new Plant Variety

Protection Act, where the Attorney General and government institutions “forced” the Bill through parliament with no inputs from other stakeholders (PFAG, 2020).

With the change of government in 2016, the style of decision-making on plant breeder’s rights protection moved from a more corporatist style in the PBB [2013] case to a state capture or abstention style in the PVP Act [2020], resulting in the speedy passage of the legislation as compared to a seven-year halt of the former. This lends credence to Filomeno's theory that the policy-making structure of a country significantly influences the formulation and adoption of IP protection laws.

2.4. CONCLUSION.

This chapter has offered an overview of debates surrounding international intellectual property protection. Orthodox perspectives supporting the idea of IPRs, and their protection have described IP rights as a legal framework for protecting Intellectual property, an incentive for innovation and creativity, and a perfect balance between rights and public interest. Other, rather critical perspectives have described IP rights, and their protection as means of legalising monopolies, tools of cultural appropriation, instruments that perpetuate economic imperialism, and a means of reinforcing a capitalist system by commodifying ideas and turning creativity and innovation into marketable products.

The chapter also discussed the nature of policymaking and how powerful states have been able to manipulate the global system and force their will on less powerful states. The chapter also highlighted the inherent challenges of the WTO's legal framework to IP protection, which involves a discursive exercise of power prioritizing wester ideas about IP over the interests of less developing states.

Finally, the chapter presented a number of theories to help us understand the factors that account for high or low levels of IP protection by states. Ghana's change of posture and successful passage of the PVP Act was in part due to a change in decision-making style from a more corporatist style of policy-making, which integrates the input of various state agencies, interested societal groups, and some representatives of the private sector to a state capture or abstention style where specific government agencies make policy decisions alone.

The bottom line is that the WTO-TRIPS accord is inherently controversial— as a system often imposed on member states against their will. But it is seen as everything from simply a good mechanism to encourage investment and innovation to a kind of new imperialism that will restrict economic development in the south and inflict some real harm on those communities. It is perhaps surprising in this light that so many countries have “gone along” with the project, but power is central to the global trade regime, and developing countries are often forced to live with policies they would not choose on their own.

In this light, the case of the PVP in Ghana is all the more interesting. What is it about the politics of agriculture and the Ghanaian political situation that created space for serious resistance to this global regime?

3.0. SETTING THE CONTEXT OF THE PVP ACT – THE EVOLVING TRADE LAW OF AGRICULTURE.

The controversy around the Plant Variety Act and its passage in Ghana's parliament has sparked many discussions about the nature of the UPOV-91 Convention and its provisions. One of the main points raised by the opposition, which this thesis also highlights, is that the back and forth involved in the passage of this PVP Act results from the inflexibilities inherent in the provisions of the UPOV-91 convention and the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement (by extension). This is because the PVP emanates from the UPOV-91 Convention, which completely mirrors the provisions of the TRIPS Agreement (Bortey & Mpanju, 2016). These systems are identical in terms of their provisions and share the same level of inflexibility regarding applicability, which is an important theme. In theory, Ghana could pursue a more flexible application of TRIPS, but that has not occurred, and it has important implications for the politics of IP protection there. To illustrate this point, this chapter will highlight the rigidity inherent in the three documents as relevant to the Ghanaian story.

3.1. THE TRIPS AGREEMENT.

The creation of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement as part of the founding of the World Trade Organization was grounded in a new set of ideas about how the nature of trade was evolving. Globalisation and the advent of new technology removed physical boundaries between states, increasing the volume of trade flows and creating new mechanisms for exchanging “goods” and “services” across borders. Conceptually, increased trade also posed new risks for the creators of “intellectual property”, such as firms that invested in new

technologies. The emerging environment was not just one of the opportunities; it also created risks for owners of production—particularly those potentially threatened by IP piracy—as some transactions could not be documented, products could easily be copied by the other firms and sold globally, and globalization itself expanded the opportunities for predatory firms to evade existing intellectual property protections.

As a result, many suggested that there was a need for the WTO to establish some minimum levels of standard protection for international trade among member states (Yu, 2013), which the TRIPS Agreement provided. The main objectives of the TRIPS Agreement were to protect and enforce intellectual property, promote innovation and dissemination of technology, protect the welfare of innovators and society, and help establish a middle ground between the rights of innovators and the obligations of users of such innovations (WTO, 2000). The Agreement also seeks to serve as a deterrent to the illegal trade of intellectual property through the implementation of border measures and ensures that these measures do not create barriers to legitimate trade (Yu, 2013).

Typical of international agreements, the negotiations leading to the passage of TRIPS have been described by many as controversial and highly contentious (Yu, 2013). The system agreed upon requires that all contracting parties (member states) of the WTO create national systems of intellectual property protection that allow holders of that technology to protect their patents and copyrights in that jurisdiction. Essentially, what the WTO did was to impose a “one-size-fits-all” regime which could potentially undermine the economic sovereignty and welfare of people in developing countries (Shukla, 2000; Mukherjee, 2023), by reducing the ability of those states to make use of new technology without paying for it through the creation of “generic” copycat products, for example. Post WTO, firms would, at least in theory, have the ability to sue producers of products that were making use of their patented or copyrighted intellectual property.

Understandably, this marked a big shift in power between states and the large drug and agricultural multinational corporations.

While a great deal of research already exists detailing the step-by-step progression of the TRIPS negotiations and how and why this change occurred (see Shukla 2000, Cottier 2015, Mukherjee 2023, and Otten 2015), the point is that developing countries found themselves operating in a changed environment after the completion of TRIPS. This section will mainly focus on the provisions of the TRIPS Agreement, primarily Article 27, which has a direct bearing on the Plant Variety Protection Act in Ghana and the challenges that it creates in the Ghanaian context.

3.2. TRIPS AGREEMENT AND ITS INHERENT RIGIDITY

Within the context of agriculture and the trade of biotechnological products, the TRIPS agreement obligates member states to make provisions for the protection of plant varieties in three ways: by patents, by the use of an effective *sui generis* system—a system that provides legal and administrative procedures to protect the private rights of plant breeders[6]—or through a combination of the latter and the former, according to article 27.3b. This implies that Ghana has three options, which include either directly setting up a patenting system to protect the owners of intellectual property, adopting the requirements of effective *sui generis* systems such as that which the UPOV-91 Convention, African Model Law (Ekpere, 2003) , Utility Model (Kim, Lee, Park, & Choo, 2012), and CoFaB (Sahai, 2000) each provide, or having both operate at the same time. Also, it prescribes that plant varieties or products to be protected must utterly meet the

[6] See Module 7 of Multilateral Trade Negotiations on Agriculture by Repetto and Cavalcanti (2000) at https://www.fao.org/4/x7355e/X7355e07.htm

requirements of novelty, inventiveness, and industrial applicability (WTO, 2000). Furthermore, per the principles of international law, the TRIPS agreement obliges member states to uphold the values of non-discrimination regardless of the source or nationality of patent applicants. These requirements come off as very rigid, at least according to the opponents of Ghana's Plant Variety Protection Act, as it does not consider the nature of biotechnological inventions in Ghana.

Ghana's style of biotechnological innovation can be described as informal, communal, and incremental (Kim et al., 2012; Oguamanam, 2008) because farmers themselves introduce new plant varieties through unconventional or informal means (Manu, 2016; Oguamanam, 2015)—no specific documentation of step-by-step processes—where information on new plant varieties spread very quickly amongst farmers. Other farmers continue the innovative process by building on those new plant varieties to a point where it is very difficult to determine the source of specific crop varieties. As a result, the requirement of TRIPS to fulfil all three conditions of novelty, inventiveness and industrial applicability becomes impossible and renders most of the existing crop varieties non-patentable. This has dire implications for the Ghanaian agricultural industry, which will be discussed in detail in the following sections.

Proponents of the TRIPS Agreement often point out that it contains some levels of flexibility, which are more apparent in some articles in the Agreement. Notably, articles 30 and 31 are cited due to the flexibility they bring in using intellectual property without the authorization of the right holder in certain circumstances (WTO, 2000). Articles 65 and 66 of the Agreement are also cited because of the level of transition periods they offer to developing and least developed countries before the full implementation of TRIPS (Abbott, 2002). Also, and most importantly for the issue of the Plant Variety Protection Act, articles 65 and 27 of the TRIPS Agreement are usually cited together because article 27 implies some level of flexibility on how countries can use or take

advantage of patents to their own interests in certain situations, whiles the article 65 permits developing countries to exclude certain subject matters from patentability for a specific time (Dutfield, 2004). Article 6 of the TRIPS Agreement is also often cited as a flexibility mechanism for developing countries to take advantage of - especially in terms of parallel importation to reduce the cost of imported products like drugs (Frankel & Gervais, 2016). Indeed, the TRIPS Agreement, on the surface, allows member states considerable flexibility in terms of how they have to comply with TRIPS requirements, but how beneficial are these mechanisms to the least developed states in practice, given the complexities of implementation and the unequal power relationships of the trade regime.

Due to the subject matter of this paper, the focus will be directed towards Article 27 of the TRIPS Agreement because it is the main source of the controversies surrounding the Plant Variety Protection Act and its predecessor, the Plant Breeders' Bill.

3.2.1. Article 27.

Article 27 of the TRIPS agreement is quite popular because of the discussions it has engendered amongst stakeholders in the agriculture sector worldwide. This is very important because the controversy surrounding the Plant Variety Protection Act hinges largely on this provision of the Agreement.

3.2.1.1. Article 27(1)

The first paragraph of Article 27 states that:

…patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application… and the patents shall be available and patent rights enjoyable without discrimination

as to the place of invention, the field of technology and whether products are imported or locally produced (WTO, 2000; pp. 331).

The first part of this paragraph, which outlines the criteria that inventions must be new, involve an inventive step, and be capable of industrial applicability, is a point for discussion when it comes to the rigidity of this Article. It implies that for any product to be protected by a patent, it must meet all three minimum requirements of newness, inventiveness, and industrial applicability at the same time. The problem is that meeting all three patent requirements does not align with or favour the nature of innovation in the Ghanaian agricultural setting.

Over generations, African farmers have had their own systematic approach to observe and make use of naturally occurring mutations in plant species to enhance crop productivity (Oguamanam, 2015). This process involves informal experimentation and communal sharing of genetic resources embedded within cultural traditions, biodiversity conservation, and ecological sustainability concerns (Oguamanam, 2008). Innovation within the African agricultural setting is a gradual, incremental process that is communal and involves observations, trial-and-error, and informal information sharing among farmers (Kim et al., 2012; Oguamanam, 2008). As a result, there is no way to trace the direct origin or owners of most agricultural innovations—and those innovations benefit the entire community. Even though this method of innovation does not meet the criteria outlined by TRIPS, it does not take away the efficacy of African farmers as custodians of agricultural biodiversity and proponents of sustainable farming methods (Oguamanam, 2006, 2007; Amanor, 2011; Ansong, 2018). This perspective challenges conventional notions of legitimacy and expertise within the agricultural innovation domain, asserting the parity of African agricultural knowledge systems with the kind of plant breeding practices recognized under legal

frameworks such as TRIPS – those basically owned and controlled by multinational agricultural firms.

The rigidity in this particular paragraph, which requires all patentable products to pass the condition of newness, inventiveness, and industrial applicability, not only undermines the role of African farmers in agricultural innovation but also creates avenues for "bio-piracy" of Ghanaian agricultural innovations and technology (Oguamanam, 2015). Bio-piracy refers to the piracy or unlawful use of local or bio-cultural knowledge of vulnerable societies through the exploitation of Intellectual property systems or power by other entities (Arewa, 2006; Mgeboji, 2006). Essentially, the risk is that those same multinational firms favoured by the TRIPS system may be able to build on or repackage existing African intellectual property, taking what was a communal "good" and making it their own private property.

The second part of this Article [Article 27.1] talks about the fact that patents must be enjoyable without discrimination regardless of the origin of the product, and the property owner is also a kind of "rigidity", especially when you situate it in the Ghanaian context. This is because TRIPS comprises several developed countries which may have been signatories of other agriculturally focused treaties, such as the UPOV, even before the introduction of TRIPS, and as such, have had many years of experience in how to navigate the regimes of such treaties (Nayyar, 2002; Sahai, 2000). This implies a large pool of patent holders in other developed TRIPS member states who are just waiting to acquire patents in developing countries such as Ghana. Unlike other developed countries, Ghana is new to patenting, especially in the agricultural sector. Even in 2016, there was little infrastructure to facilitate research and studies into agricultural products or biotechnology (Bortey & Mpanju, 2016; Rock, 2018).

As a result, it is very plausible that with the passage of the Plant Variety Protection Act, big firms and entrepreneurs from foreign countries could and would overrun the patent system in the country, resulting in the "early bird analogy" where almost every patent in the agricultural sector could be owned by foreign nationals and firms (Cleveland & Murray, 1997). Such a situation is undesirable because it will not auger well for the future of the agricultural economy and the protection of indigenous crops in the country. A more flexible approach to this provision, especially for developing countries like Ghana, would have been to allow countries to decide which type or varieties of crops can be patented to foreign nationals or allow such countries to set quotas on the number of patents that may be granted to foreign nationals or corporations within a stipulated time frame. As it stands, TRIPS favoured established patent holders in foreign countries rather than in the interest of the Ghanaian economy.

3.2.1.2. Article 27(3)

Another source of controversy is the third paragraph of this Article [Article 27.3b], which emphasizes that:

"Members may also exclude from patentability plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof." (WTO, 2000; pp. 331).

The last part of this paragraph [27.3b], which obligates member states of the WTO to protect plant varieties either by patents, an effective *sui generis* system or both, has been another subject of

controversy around how this might impact Ghana. From the preceding paragraphs, it is clear how the process of patenting or acquiring patents for innovations does not benefit Ghanaian farmers and, thus, is unsuitable for the African setting. The second part [27.3b], which talks about providing an effective *sui generis* system, is also problematic for the Ghanaian agricultural industry because it compels Ghana to accept the existing UPOV's PVP, which is the main issue of contention in the context of this chapter.

Llewelyn and Adcock (2006) have noted that there are only three ways to implement article 27.3b, which are:

- Implement a patent act or a *sui generis* system that agrees with the UPOV.
- Eliminate patents but set up a *sui generis* system that agrees with the UPOV.
- Set up patent protection and a non-UPOV *sui generis* system.

This makes one wonder if the UPOV is the only *sui generis* system around and if the drafters of TRIPS had the UPOV in mind (Saldivar, 2014). For the avoidance of doubts, there are several *sui generis* systems, such as the African Model Law (Ekpere, 2003), the Utility Model (Kim, Lee, Park, & Choo, 2012), CoFaB (Sahai, 2000), and many versions of the UPOV. However, the UPOV-91 is the system preferred by the US and most developed countries in Europe because of its provisions, which do not allow for things like seed sharing amongst farmers (Saldivar, 2014).

Furthermore, poor and developing countries are often forced to accept the UPOV-91—even though it is not in their interests—because it is tied to aid, bilateral Free Trade Agreements (FTAs) and Economic Partnership Agreements (EPAs) (Antons, 2016). As a result, even if aspects of the TRIPS might have implied more flexibility for member states, effectively Ghana, like so many

other developing countries, is under pressure to adopt a narrow and rigid approach to intellectual property that favours multinational agricultural firms.

As demonstrated in this section, article 27.1, in combination with 27.3b, effectively offers no flexibility or opportunity for states with a communal style of agriculture, such as Ghana, to benefit from patents. If there is any real flexibility, it is definitely not in the favor of the Ghanaian setting or agricultural system. This is because it compels the state to choose between the unfavourable conditions of patenting and the UPOV-91 *sui generis* system, which is even more rigid than the provisions available in the TRIPS Agreement. This will be discussed in the next section under the UPOV-91 Convention.

3.3. UPOV-91 CONVENTION.

Running parallel to the TRIPS, the UPOV-91 Convention is a successor to a number of such agreements between UPOV member countries since its inception in 1961. The current UPOV-91 Convention is a culmination of previous modifications of 1961, 1972, and 1978 versions (UPOV, 2011) to ensure its consistency with developments in the professional breeding spheres of member states (De Jonge, 2014). The stated goals of the UPOV system are to ensure food security and promote innovation in agriculture. The system has sought to achieve these goals by establishing the necessary legal, administrative, and technical framework to facilitate international collaboration in safeguarding plant varieties, assisting countries and institutions in crafting legislation and implementing systems for protecting plant varieties (UPOV, 2011). In the beginning [1961], the UPOV was designed, in effect, to protect the interests of commercial plant breeders in Europe until other non-European states acceded to it later on [1980 onwards] (Dhar & Chaturvedi, 1998).

The UPOV-91 is not the only effective *sui generis* system in the world, but its membership has grown significantly, especially amongst countries like Ghana, even though it does not necessarily benefit developing countries (Dhar & Chaturvedi, 1998). This growth in membership has been associated with the obligations from bilateral trade agreements (Dutfield, 2011) and regional trade agreements such as the African Regional Intellectual Property Organization (ARIPO) and the Southern African Development Cooperation (SADC), which also comply with the provisions of the UPOV-91 Convention (De Jonge, 2014). The pressure to adopt the provisions of the UPOV-1991 Convention alongside regional free trade agreements has become widespread to the extent that the Geneva Academy advised EU Member States to cease promoting UPOV 1991 during trade negotiations. Instead, they are encouraged to support developing countries in utilizing TRIPS to create *sui generis* plant variety protection systems suited to their specific intellectual property environments (Golay & Fulya, 2021).

3.4. UPOV-91 AND ITS INHERENT RIGIDITY.

The UPOV-91 Convention prescribes that plant varieties or products to be protected must meet the requirements of newness, distinctiveness, uniformity, and stability (UPOV, 1991). Again, in accordance with the principles of international law, the UPOV-91 Convention obliges member states to uphold the values of non-discrimination regardless of the source or nationality of patent applicants. Just like the TRIPS Agreement, these requirements come off as very rigid, at least according to the opponents of Ghana's Plant Variety Protection Act, because it does not consider the nature of biotechnological inventions in Ghana. Ghana has an informal, communal, and incremental nature of biotechnological innovation (Kim et al., 2012; Oguamanam, 2008) and renders a lot of the existing Ghanaian crop varieties non-patentable.

Similar to the TRIPS Agreement, proponents of the UPOV-91 have argued that it contains some level of flexibility which could accommodate the dynamics of agriculture in different geographical contexts. Mention is usually made of article 3.2(ii), which grants member states the grace period of about 15 years to protect all plant species according to the provisions of the UPOV-91 Convention, which is more than the ten-year grace period provided in the TRIPS Agreement. Also, article 15 is quoted by proponents of the UPOV-91 Convention for enabling farmers to reuse seeds on their own farms for non-commercial purposes or subsistence. The laws or provisions in Article 16 of the UPOV-91 Convention are also often quoted by proponents as "flexibility" because it allows developing countries to employ tactics of parallel importation to benefit the local economies of such countries because parallel importation helps to address the rising cost of similar products in the local market. However, as demonstrated in the case of the TRIPS Agreement in the previous section, these flexibilities do not favour developing countries such as Ghana in terms of their practicality.

3.4.1. Article 5.

In the context of the Ghanaian Plant Variety Protection Act, Article 5 of the UPOV-91 Convention provides significant rigidity and has been a source of controversy. This provision states that the breeder's right shall be granted where the variety is new, distinct, uniform, and stable (UPOV, 1991). This provision of the UPOV-91 Convention implies that all these conditions of newness, distinctness, uniformity, and stability have to be fulfilled together for a patentable product to be protected under the UPOV-91 convention. In the Ghanaian context, similar to the TRIPS Agreement [Article 27.1], some parts of this provision are rigid and unfavourable because of how agricultural innovation occurs.

As described in 3.2.1.1, some parts of these criteria do not favour developing countries like Ghana due to the nature of innovation in its agricultural sector (De Jonge, 2014). As Oguamanam (2015) explained, African farmers and stakeholders in the agricultural system have had their own traditional and informal ways of innovation that do not follow the systematic procedures developed countries follow. Rather, it is a gradual or incremental innovative process which involves informal experimentation, trial and error, and communal information sharing of genetic resources embedded within cultural traditions, biodiversity conservation, and ecological sustainability concerns (Kim et al., 2012; Oguamanam, 2008). Generally, these changes and the processes involved are not strictly observed and documented to show the step-by-step transformations because the focus is on communal utility rather than patenting (Manu, 2016; Oguamanam, 2015).

Article 7 of the UPOV-91 Convention explains the requirement of distinctness:

The variety shall be deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application. (UPOV, 1991; pp. 7).

This implies that the new variety must not be completely the same as any other existing crop variety. To show the distinctness of plant variety, the plant must show some difference from other varieties, at least in one clearly distinguishable feature or characteristic (Plant and Soil Science eLibrary, 2020). From this explanation, the criteria of distinctiveness could offer some flexibility for farmers in the Ghanaian agricultural setting from having to comply with IP protection rules, but only if they are able to prove or establish at least one characteristic of plant varieties that distinguishes them from other existing plants.

However, in practice, there are concerns about the manner in which crop varieties can be proven as distinct, which involves either a qualitative method of observable differentiation or a quantitative method which involves the measurement of properties of crop varieties (Plant and Soil Science eLibrary, 2020). Due to the gradual or incremental nature of innovation in the Ghanaian agricultural setting, it may be somewhat difficult to prove the difference between crop varieties because some crop varieties may be very similar in composition (Kim et al. 2012), which may lead to conflicts between farmers and officials at the patenting offices. As advanced by De Jonge (2020), this limits the threshold for inventiveness.

Regardless of any perceived flexibility in the provision of distinctness, whether real or theoretical, the other conditionalities carry significant levels of inflexibility.

Article 6.1 of the UPOV-91 Convention explains the requirement of novelty or newness:

The variety shall be deemed to be new if, at the date of filing of the application for a breeder's right, propagating or harvested material of the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder, for purposes of exploitation of the variety. (UPOV, 1991; pp. 7)

This provision implies that breeders of crop varieties must be identifiable and must be able to demonstrate the newness of the patentable crop in question. Unfortunately, this might be very difficult to achieve in the Ghanaian situation.

Owing to the nature of innovation explained above, ownership cannot be assigned to one particular individual, and the newness of crop varieties cannot be easily established and dated. This renders most of our existing crop varieties non-admissible or ineligible to be patented under the UPOV-91

Convention and its offspring—the Plant Breeders' Bill to be passed. To be clear, the rigidity in this provision of the UPOV-91 Convention stems from the requirement and concept of newness, which is not compatible with the nature of innovation within the African agricultural sector and does not acknowledge the efforts or the roles of farmers in innovation.

Article 8 of the UPOV-91 Convention explains the criteria of uniformity:

The variety shall be deemed to be uniform if, subject to the variation that may be expected from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics (UPOV, 1991; pp. 8).

This implies that the material for propagating the plant variety must be the same in appearance, and if there are any differences or variations in composition, it must be within limits or acceptable standards, which are determined by the patenting office or authority (Plant and Soil Science eLibrary, 2020).

As explained above, the nature of innovation in the Ghanaian agricultural setting is gradual, incremental, and communal (Kim et al., 2012; Oguamanam, 2008). As a result, ownership of varieties is not easily identifiable. Additionally, because the focus of farmers is not necessarily on patenting—as a result of their commonality—there is almost no documentation of the step-by-step procedure for creating new varieties (Manu, 2016; Oguamanam, 2015). This combination of anonymity and lack of documentation makes it cumbersome to fulfil these criteria of uniformity because the specific propagating material may not be easily identifiable in some cases. This marks another rigidity in the UPOV-91 Convention, which does not favour the Ghanaian agricultural

setting. De Jonge (2014) explained that the criteria of uniformity results in the loss of genetic diversity and a rise in genetic vulnerability.

It is imperative to state that in spite of the requirements of the UPOV-91 Convention, the farmers in the Ghanaian setting still engender innovation of new crop or plant varieties just as the farmers and biotech engineers in developed countries and as such, their efforts should not be discounted due to unfavourable parameters set up by the Convention (Oguamanam, 2006, 2007; Amanor, 2011; Ansong, 2018). However, the rigidity of provisions in the UPOV-91 Convention denies African farmers the benefits of their innovations and creates a fertile ground for bio-piracy, which has adverse implications for the country's economy (Oguamanam, 2015).

3.5. SIMILARITIES BETWEEN TRIPS AGREEMENT AND UPOV-91 CONVENTION.

This chapter has advanced the point that the back and forth around the passage of Ghana's Plant Variety Protection Act is a result of the inflexibilities inherent in the TRIPS Agreement and the UPOV-91 Convention by extension because the latter is a mere mirror or duplication of the former (Bortey & Mpanju, 2016). As a result, it creates a situation where two external pressures act on Ghana to do the same thing. To prove this point, this section will highlight the similarities between the TRIPS Agreement and the UPOV Convention, with the Ghanaian PVP story in mind.

Within the context of the Plant Variety Protection Act discussion in Ghana, the TRIPS Agreement and the UPOV-91 Convention present two main relevant similarities bordering on minimum standards for patent protection and equal treatment in patent acquisition. As a result, this section will focus mainly on these two themes.

3.5.1. Minimum Standards.

Concerning the subject of patenting, Article 27.1 of the TRIPS Agreement provides minimum requirements that ensure that inventions are new, involve inventive steps, and are capable of industrial application (WTO, 2000). In similar and even more expansive terms, Article 5-9 of the UPOV-91 Convention prescribes that in order to get a patent for plant varieties, they must be new, distinct, uniform, and stable (UPOV, 1991). In comparing both provisions, it is clear that the UPOV-91 Convention requires patentable materials to be new, distinct, which, according to the explanation provided by Article 7 of the UPOV-91 quoted in section 3.4, implies having an inventive step (as stated in the TRIPS Agreement), uniform and stable—which enables such plant innovations to have industrial application—which is very similar to the minimum standards of protection outlined in the TRIPS Agreement in terms of technicality and applicability. In fact, the UPOV-91's requirements can be described as a more detailed version of the TRIPS requirements on the minimum standards of protection for patents. This is one of the major reasons why this essay posits that the UPOV-91 Agreement mirrors the TRIPS Agreement, especially concerning the objections raised against the Plant Breeders' Bill (Bortey & Mpanju, 2016). As a reminder, these objections highlight the fact that the minimum requirements of patentable products do not favour the needs and interests of Ghanaian farmers and neglect their roles in agricultural innovation.

3.5.2. Equal treatment.

Again, the considerable similarity between both treaties and specific provisions that guarantee "equal treatment" to patent applicants. In the case of the TRIPS Agreement, Articles 1.3 and 27.1 enjoin members of the WTO to not discriminate with regard to the licensing of patents, especially

to applicants with foreign nationalities belonging to other member states. The Agreement requires member states to extend the same treatment to all applicants regardless of the place of invention (a fairly standard statement of the principle of national treatment which is core to the WTO), the field of technology and whether products are imported or locally produced (WTO, 2000). In the same way, Article 4 of the UPOV Convention also obliges members of the UPOV to grant breeders' rights to applicants of foreign nationalities and extend the same treatment to them as their own nationals, so far as they are from UPOV member countries. This similarity of provisions is relevant to the Ghanaian PVP story because there have been concerns about foreign nationals and firms—from states with robust biotechnologies and years of experience (Nayyar, 2002; Sahai, 2000) and UPOV adaptation, acting as "early birds" overrunning and owning a significant percentage of agricultural patents (Cleveland & Murray, 1997) now that the PVP Bill has been passed.

3.5.3. Other Similarities.

Apart from the two highlighted areas above, there are other aspects of both treaties which are similar in technicality and applicability. These areas include duration of protection, enforcement, exceptions and limitations of protection.

3.5.3.1. Duration of Protection.

Both treaties contain some similarities when it comes to the duration of protection. Regarding the TRIPS Agreement, Article 33 sets minimum standards for the duration of patent protection, typically 20 years from the filing date. Similarly, Article 19 of the UPOV-91 also specifies the duration of protection for plant varieties for a period of 20 years. In the case of vines and trees, protection is up to 25 years.

3.5.3.2. Enforcement.

Again, both treaties contain some similarities regarding the enforcement of intellectual property laws. For the TRIPS Agreement, Articles 41-61 require member countries to provide effective enforcement procedures and remedies against intellectual property infringement. Similarly, Article 30 of the UPOV-91 mandates member countries to establish effective enforcement mechanisms to prevent unauthorized use of protected plant varieties.

3.5.3.3. Exceptions and Limitations.

Both treaties contain some similarities in the exceptions and limitations of protection granted to intellectual property owners. In the case of the TRIPS Agreement, Articles 30, 31, and 33 allow member countries to establish certain exceptions and limitations to patents and other intellectual property rights for purposes such as public health and access to medicines. On the other hand, Articles 15 and 17 of the UPOV-91 also permit member countries to establish exceptions and limitations to plant breeders' rights for purposes such as research and breeding activities.

This section demonstrates the similarities between the UPOV-91 Convention and the TRIPS Agreement. The UPOV-91 provides more detailed and more expansive requirements compared to the TRIPS Agreement's provisions, especially because it focuses mainly on agriculture, but the key point here is that working together, both construct a very rigid system of intellectual property protection that must be applied in member states – a system that privileges the needs of multinational agribusinesses over how agricultural intellectual property is created in places like Ghana.

3.6. GHANA'S PLANT VARIETY PROTECTION ACT.

Ghana is a member of the WTO, and as a result of the 'single undertaking' that concluded the Uruguay Round of GATT negotiations, it is also a member of the TRIPS Agreement by extension. Like many other developing countries, this has meant that Ghana is required to create a system of intellectual property protection consistent with the WTO requirements—even though many developing countries opposed this requirement for exactly the same reasons as we see in the Ghanaian case. As a WTO member, Ghana is required by Article 27.3b of the TRIPS Agreement to either provide patents to its plant varieties, adopt an effective *sui generis* system, or employ a method that combines both (WTO, 2000). This implies that Ghana has three options, which include either directly setting up a patenting system to protect the owners of intellectual property, adopting the requirements of effective *sui generis* systems such as that which the UPOV-91 Convention, African Model Law (Ekpere, 2003) , Utility Model (Kim, Lee, Park, & Choo, 2012), and CoFaB (Sahai, 2000) provide, or having both operating at the same time.

Since the Ghanaian government started making efforts to pass a set of laws to protect the rights of plant breeders, it has always been a very cumbersome process. From the introduction of the first Plant Breeders' Bill to the new Plant Variety Protection Act, there has always been strong opposition from various sections of the public due to how rigidly the international regime interprets the nature of intellectual property and who can obtain it. Effectively, the Plant Breeders' Bill and the Plant Variety Act were designed in conformity with the UPOV-91 Convention (Bortey & Mpanju, 2016) and the TRIPS Agreement and, therefore, "import" those agreements' narrow interpretation of IP into Ghanian law.

The Plant Variety Protection Act and its predecessor, the Plant Breeders' Bill, function as an intellectual property rights instrument designed to institute a legal framework safeguarding plant breeders' right. Their primary objective was to establish a system that not only protects plant breeders but also establishes mechanisms for rewarding their efforts. The overarching goal is to foster and encourage plant breeding activities of the kind engaged in by multinational firms, which then, so the argument goes, could contribute to agricultural development and help ensure food security within the country (WIPO, 2020). It was argued that this system would also support the more rapid introduction of genetically modified organisms (GMOs) and associated research endeavours as the patent process would be streamlined. Proponents argued that it would provide farmers access to a superior range of seeds at cost-effective prices, thereby enhancing agricultural productivity. Another goal of the legislation was to encourage investment in plant breeding and improve the seed industry by stimulating competition amongst firms, encouraging price stabilization, and providing employment to the private sector (WIPO, 2020).

3.7. GHANA'S PLANT VARIETY PROTECTION (PVP) ACT AND ITS INHERENT RIGIDITY.

Ghana's recently passed Plant Variety (PVP) legislation, just like its predecessor, the Plant Breeders' Bill, has been criticized for containing significant "inflexibilities" which will not favour the interests of farmers and the agricultural sector. Similar to the UPOV-91 Convention, which it mirrors, the proponents of the PVP have highlighted the provision on farmers' rights in Clause 20 of the PVP Act, which allows farmers to replant seeds on their own farms for subsistence or for non-commercial purposes (WIPO, 2020) as one of its "flexibilities". Also, as stated in clause 21 of the PVP Act, proponents mention the advantage of exhaustion, which enables parallel

substitution and may help the country control the cost of agricultural products in the system. Also similar to that of the UPOV-91, the PVP Act offers owners of patents a protection period of 20 years and an extension of 5 years in the case of trees and vines, as stated in Clause 27 of the PVP Act. I also thought of this as a local “flexibility” in the system because it gives owners of patents ample time to reap the fruits of their hard work and encourages innovation.

However, at its core, the legislation applies the basic TRIPS/UPOV framework, which, as argued above, threatens traditional Ghanaian agricultural practices. Essentially, even if there were more room for a more flexible adaptation to local practices and processes in the international regime, the Ghanaian legislation does not pursue that flexibility.

3.7.1. Minimum Requirements for Patentability.

Clause 3 of the Plant Variety Protection Act outlines the conditions or requirements necessary for the protection of plant breeders' rights, which includes the same “novelty, distinctness, uniformity, and stability” described above (WIPO, 2020).

As already established, these minimum requirements inhibit the patentability of existing crop varieties because of the nature of innovation in the Ghanaian context. In Ghana, it is difficult to point out the real originator or origin of plant varieties after a long period of time, not to mention the dating and composition of plant propagators.

Looking at the minimum requirements of the Plant Variety Protection Act for patenting, a lot of plant varieties that farmers have planted from time immemorial till the passage of the Bill may be rendered non-patentable. This overlooks the role and efforts of Ghanaian farmers in innovation in the agricultural sector and also provides fertile grounds for the bio-piracy of these indigenous crop varieties by foreign corporations or private firms (Oguamanam, 2015). Essentially, Ghanaian

farmers face a very real prospect of eventually having to pay for seeds, etc., utilizing biotechnology that was once developed for free use in African society – things that were once communal and public are made private property through a one-sided intellectual property protection system. These are very real risks.

3.7.2. "Early Birds" Control the Patent Scene.

At the least, the “early bird analogy” is a real problem for the PVP Act. Section 9 ensures that patent rights are extended to applicants not only from or within the country but also from other foreign countries, provided they are members of any treaty Ghana is also a member of (WIPO, 2020). This provision upholds the international values of non-discrimination and national treatment, which is commendable within international politics and diplomacy.

In as much as national treatment and non-discrimination are morally acceptable, the reality is that they do not benefit developing countries such as Ghana when in the early stages of PVP implementation. This is because clause 9 opens Ghana's patenting space to very developed countries which have had years of experience with the UPOV-91 and its intricacies and have a pool of patent holders who had been waiting to be "early birds" for the law to be enacted (Nayyar, 2002; Sahai, 2000). With the limitation created by the minimum provisions and the lack of research capacity and infrastructure (Bortey & Mpanju, 2016; Rock, 2018), the country's patenting records could be overrun by a majority of foreign nationals owning a significant percentage of agricultural patents (Cleveland & Murray, 1997). This possibility is alarming and does not play to the interests of local farmers and the agricultural sector.

The PVP Act is an almost perfect copy of the UPOV-91 Convention and is evident by the similarities of the rigidities inherent in both documents. In some of the provisions, there is literally

a word-to-word duplication of the UPOV-91's provisions in some Sections of the PVP Act passed in 2020.

3.8. SUMMARY AND CONCLUSION.

The main aim of this chapter has been to drive home the point that the Plant Variety Protection Act, the UPOV-91 Convention, and the TRIPS agreement are all very similar in terms of their conditionalities, and they put Ghana under pressure to adopt a rigid system of intellectual property protection which is not compatible with the nature of agricultural intellectual property protection in the country.

As prescribed in all three documents, the minimum requirements of newness, inventiveness, and industrial applicability render existing crop varieties in Ghana non-patentable due to the gradual or incremental, communal and informal nature of innovation in the country's agricultural sector. This undermines the innovative efforts made by the Ghanaian agricultural community over the years and also makes it easy to promote the bio-piracy of existing crop varieties.

While proponents of the Plant Variety Protection Act argue that implementing this system will have long-term benefits for Ghanian agriculture, the point here is that they stem they have implemented is the one demanded by global multinational corporations – it protects their right to privatize intellectual property in ways that may be particularly disadvantageous to Ghana.

4.0. THE POLITICAL ECONOMY OF GHANAIAN AGRICULTURE

This chapter provides and overview of the agricultural sector of Ghana since the pre-colonial era and gives more context to the nature of Ghanaian innovation and biotechnology. This chapter

outlines the efforts made by successive governments since independence to move away from Ghana's reliance on smallholder farming to larger-scale commercial farming practices. The fact that the country is still heavily reliant on small-scale farming after years of various attempts is telling enough. It underlines the importance of adequate flexibility in any policy or intervention that seeks to change Ghana's small-scale agricultural status quo. This chapter argues that the Plant Variety Protection Act does not offer enough flexibility to incentivize the country's shift from small-scale to commercial farming, which is one of the major implications of passing the Plant Variety Protection Act. Essentially, agricultural development in Ghana runs counter to the system of IP protection demanded by the TRIPS process.

4.1. THE NATURE OF AGRICULTURE IN GHANA.

Agriculture is the backbone of the Ghanaian economy and has been the primary determinant of the country's economic fortunes since time immemorial. Out of approximately 239,000 km square, which is the total land size of the Republic of Ghana, agriculture occupies 106,000 km square, about 44 per cent (GIPC, 2022). However, if we are to consider total land only, Agriculture occupies about 55 per cent, which is higher than the 39 per cent of land used for agriculture in the whole of Africa in 2021 (Statista, 2024). Agriculture in Ghana employs a significant proportion of the country's labour force, which is estimated to be 38.3 per cent, with the remainder of 43.5 and 18.2 going to the services and industrial sectors, respectively (GSS, 2019). Over the years, agriculture has contributed significantly to the country's GDP, with 23 per cent in 2012 (FAO, 2015) and 30 per cent in 2017, for instance (Dzanku & Udry, 2017). However, in recent times, agricultural's contribution to the country's GDP has plummeted to about 19 per cent in 2022 (Statista, 2024).

In Ghana, the majority of farming is done by “smallholders” who often do it primarily for subsistence instead of focusing on commercialisation (Martey, Al-Hassan, & Kuwornu, 2012; Ferreira et al., 2022). According to Stumpf (2023), roughly 80 per cent of agricultural products in Ghana are from smallholder farming. Most farms in Ghana—like most parts of the continent—cultivate less than 2 hectares of land, which is far below the 5-hectare threshold as defined under the UPOV-91 system as small-scale farming (Bortey & Mpanju, 2016; MOFA, 2022). Per long-standing tradition in the Ghanaian setting, chiefs and family heads are the custodians of community lands, and as such, they allow members of the communities to cultivate the land for the benefit of the entire community (Azumah & Noah, 2023). This long-standing tradition is even reinforced in the country's constitution. According to Article 267 of Ghana's 1992 constitution, the chiefs and family heads are the custodians of such lands, and they have the power to enforce rights and obligations to the land which has been granted (Azumah & Noah, 2023; pp. 25). This structure applies to rural, peri-urban, and urban centres. Usually, no land is possessed by the State except the land that has been obtained through lawful proclamation, statutory procedures, ordinances, or international treaties (Azumah & Noah, 2023).

Due to the subsistence motive of farming and the traditional system of land custody by the chiefs and family heads within Ghanaian society, it is not surprising that most farmers have operated smallholder farms with less than two hectares of land throughout the country's agricultural history.

For the most part, farmers still use traditional tools such as hoes and cutlasses for farming, while mechanised systems are not widely adopted (MOFA, 2022). In some parts of Northern Ghana, farmers practice bullock farming to till farmlands (ibid.). Unlike large-scale or commercial farms that mostly engage in monoculture, most farms in Ghana practice mixed farming or intercrop

systems, meaning that farmers plant more than one crop on the same farmland simultaneously (MOFA, 2022).

It is important to mention that there have been efforts made to adopt modern agricultural technology and practices such as irrigation, fertiliser application, and use of resistant varieties, just to mention a few; however, smallholder farmers have found it difficult to maintain these approaches due to financial limitations (Darfour & Rosentrater, 2016).

4.2. HISTORY OF SMALLHOLDER FARMING IN GHANA.

Smallholder farming in Ghana has a long history that dates back to colonial times in the Gold Coast era (Ghana's name pre-independence) (Yaro, Teye, & Torvikey, 2018). Smallholding actually helped support export-oriented agricultural growth during the colonial period. Initially, with the arrival of the Dutch in the 18th century, the plantation system of farming was introduced into the jurisdiction (Yaro, Teye, & Torvikey, 2018), marking the early days of commercial farming in the Gold Coast. For instance, the large-scale production of palm oil increased in 1874, implying the use or adoption of commercial norms and practices in farming, especially in terms of land and labour (Hilson, 2002; Jackson, 1992). To be able to produce enough palm fruits at a commercial level, there was the need to expand the size of farmlands and increase the number of workers on these farms, which was a total departure from the traditional smallholder farming of the Gold Coast.

However, this move to plantation-style agriculture did not last very long, partly because of conflicts between ethnic groups and inter-colonial disputes over territorial expansion and possession (Huddleston & Tonts, 2007). Additionally, the British colonial rulers—who took over from the Dutch—were not in favour of the complete switch to or adoption of the commercial

method of farming because they believed that traditional systems of farming were more economically feasible within the Gold Coast agricultural setting (Huddleston & Tonts, 2007). Commercial farming on the Gold Coast meant that the British colonial rulers would have had to acquire larger hectares of farmlands, which would have attracted strong opposition from peasants and small farmers because of the likelihood of strong competition. As Gyasi (1996) argues, the last thing the British colonial rulers wanted was national instability, which could adversely affect the export-oriented production system in which they operated on the Gold Coast (Seini, 2002). It is important to add that this export-oriented mode of agricultural production helped the farmers because the market was created out of competition amongst European merchants for agricultural produce from the region (Seini, 2002). The activities of such smallholder farmers pushed Ghana to become the leading producer of cocoa in the world from 1911 (ibid.), and it only lost this position to the Ivory Coast in 1978 (WPR, 2024).

4.3. POLICIES AND PROGRAMMES INTRODUCED BY SUCCESSIVE GOVERNMENTS TO FACILITATE EXPANSION TO LARGE-SCALE FARMING.

As a developing country, productivity, especially in agriculture and the primary sector in general, is key to economic development, at least according to Rostow's (1960) theory of economic growth. With the aim of increasing productivity and economic growth, successive governments, be it democratic or military regimes, have made several efforts over the years to help smallholder farmers transition into commercial farming through policies and specially targeted programmes.

This section will account for the efforts made by successive governments from the country's independence in 1957 to the present.

4.3.1. 1951 – 1966: Nkrumah's Failed Attempt at Commercial Farming.

Leading to Ghana's independence from the British colonial rulers, Dr Nkrumah won the general elections in 1951 and became the Prime Minister of a transitioning Ghana-British government until Ghana became a fully independent in 1957. During this transition period, Dr Nkrumah tried to move away from the traditional smallholder system of farming, which fuelled the export-oriented production structure of the British colonial government (Yaro, Teye, & Torvikey, 2018). As Seini (2002) explains, agricultural policies in Ghana during the aftermath of colonial rulers were fueled by two main aims of nationalist governments: rewarding the unemployed youth who were instrumental to the fight for independence with jobs and proving the point that the most prudent way to economic growth and independence was through industrialisation. As a result, an agricultural policy that created "jobs for the people" became necessary for the government (ibid.). Consequently, Nkrumah introduced the first Five-Year Development Plan—from 1951 to 1956—which supported the development of large-scale state farms, which were under the control of the state and employed mechanised methods of agricultural production (Songsore, 2003). After the first, the government introduced a second Five-Year Development Plan from 1959 to 1964 (Seini, 2002). The Nkrumah government also established the Agricultural Development Bank (ADB), which aimed to provide low-interest loans to farmers to enable them to expand and increase their cultivation. This government also compelled commercial banks to allocate at least 5 per cent of their loanable funds to the agricultural industry at reduced interest rates (Seini, 2002).

Contrary to the position of the British, Nkrumah believed that smallholder farming systems were difficult to modernise or develop; thus, there was a need for the government to set up state-

controlled farms to lay the foundation for commercial farming in the country (Songsore, 2003). Another reason was that small-scale farming was not in line with the socialist ideology of the Nkrumah government since the practice bred conservatism, acquisitiveness, and the promotion of bourgeois mentality (Killick, 1978).

Unfortunately, just like the commercial system introduced by the Dutch, this new system did not last long. The government encountered many problems in implementing this five-year policy, including funding or financial limitations, political interference issues, bad planning and management of the project, and the inflexibilities associated with a centralised state control system (Gyasi, 1996). For instance, Dapaah (1988; cited in Seini, 2002) lamented how only between 4.3 and 13.5 per cent of GDP was allocated to a major sector such as agriculture between 1961 and 65; meanwhile, more revenue was allocated to other socialised sectors. These limitations rendered the entire project unsustainable and non-functional, resulting in the discontinuation of this line of policy after Nkrumah's overthrow in 1966. The succeeding military government privatised these state-commercial farms but re-adopted the export-oriented approach the British colonial rulers used during the Gold Coast Era (Yaro, Teye, & Torvikey, 2018).

4.3.2. 1966 – 1972: NLC and Agricultural Privatisation.

After the overthrow of the first government through a coup in 1966, the National Liberation Council (NLC) liberated the economy, reversing the economy to a market-oriented economy where Nkrumah's State farms were substituted with private or capitalist control of agricultural production (Khor, 2002). This capitalist or private agricultural production system involved large-scale farming, which employs the use of mechanised farming methods.

4.3.3. 1972 – 1980s: Acheampong's Idea of Fusion.

In 1972, the government led by General Acheampong modified the agricultural policy advanced by the previous government. With the new policy, the Acheampong government advocated for the development and adoption of large-scale private farming systems, just like the previous regime; however, the government also acknowledged the activities of smallholder or small-scale farmers in the country (Daddieh, 1994). One very profound statement in Ghanaian agricultural history is "Operation Feed Yourself", which was the title of a program introduced by the Acheampong government to promote subsistence farming, which is one of the main characteristics of smallholder agriculture (Yaro, Teye, & Torvikey, 2018). In addition to the OFY, there was also the Operation Feed Your Industries (OFYI) policies in 1972 (Khor, 2006; Seini, 2002), which focused on the production of crops such as cotton, rice, kenaf, and sugar cane, as well as other raw materials for the manufacturing sector. This resulted in the country becoming self-sufficient in the production of rice from 1974 to 1975 (Khor, 2002; Seini, 2002).

4.3.4. 1980s – 1990s.

In the early 1980s, the government at the time introduced programmes such as the Volta Regional Agricultural Development Programme (VORADEP), the Northern Regional Rural Integrated Project (NORIP), and the Managed Inputs Delivery and Agricultural Services (MIDAS) to make agricultural services and inputs available to smallholder farmers frequently (Seini, 2002). These programmes aimed to equip small-scale farmers with the facilities and inputs needed to upscale their production.

4.3.5. 1990s – 2001.

In the early 1990s, the government introduced programmes such as the International Fund for Agricultural Development (IFAD), which also had the overarching objective of enhancing the output or productivity of smallholder farmers in areas such as the Northern, Upper East, Brong-Ahafo, Ashanti, and Volta Regions of the country (Seini, 2002). Also, the government of Ghana introduced the Vision 2020 programme in 1995, which included plans to accelerate the country's agricultural sector's growth by 2020 (Rawlings, 1995; Seini, 2002). The government envisaged an increase in annual growth from 4 per cent at the time of introduction to close to 6 per cent as of 2020 (Kolavalli et al., 2010; ReSAKSS, 2015; Seini, 2002).

4.3.6. 2001 – 2024.

During the Kufuor regime in 2001, the government introduced national policies such as the Accelerated Agricultural Growth and Development Strategy (AAGDS), the Food and Agricultural Sector Development Policy (FASDEP I & II) in 2002, the National Aquaculture Development Plan, among others (Appiah-Kubi, 2011), all with the main aim of augmenting the resources of small scale farmers, enabling them to increase productivity and scale up their cultivation. The current government has also shown some interest by introducing national policies such as the Planting for Food and Jobs (PFJ) and establishing the Ghana Exim Bank. They aim to contribute to the modernisation of the agricultural sector and improve the capacity and competitiveness of the country's agrarian sector through financing, respectively (AFI, 2018).

From this section, it is evident that smallholder or subsistence farming is as old as the Republic of Ghana, and it also shows how difficult it is to move away from those practices – whatever initial intentions governments may have had, policy always seems to have returned to compromise with

the reality of Ghana's smallholder system. With this background of failed attempts by various governments to change the country's agricultural system, it is not surprising that conflict was inevitable, given the Plant Variety Protection Act's embrace of the intellectual property rigidities of the TRIPS regime. The TRIPS system was unfavourable to the Ghanaian agricultural system and was thus understandably opposed by the farmers as well as civil society organizations.

4.4. AGRICULTURAL PRODUCTION IN GHANA.

Ghana's success as an agricultural producer is, in some sense, unique – it is a major exporter of agricultural products produced on uniquely small farms. However, this system has encountered challenges.

4.4.1. Agricultural Products.

Despite Ghana's heavy reliance on small-scale farming, the country can boast of impressive successes in terms of its agricultural productivity over the years. Ghana's main agricultural products or commodities include cocoa, yam, banana, cassava, corn, oil palm, cotton, and coconut, among others (FAO, 2015). Regarding fruits and vegetables, Ghana produces mainly pineapple, citrus, banana, pawpaw, mango, tomato, pepper, okra, eggplant, and onion (MOFA, 2022). In 2020, Ghana was the second highest producer of cocoa worldwide, after the Ivory Coast (GIPC, 2022), and this has not changed as of 2022 (WPR, 2024). Ghana was the fourth largest producer of cassava worldwide, with a production capacity of 22 million tonnes in 2020 (GIPC, 2022). This is not so surprising since roughly 1 million hectares of farmland are used for cassava cultivation yearly, and about 70 per cent of farmers in Ghana are into cassava cultivation (ibid.). Additionally, when it comes to the production of yam worldwide, Ghana comes second after Nigeria, and this is evident in the year 2020, which saw the country's output of about 8.5 million tonnes of yam (GIPC, 2022).

4.4.2. Ghana's Heavy Reliance On Food Importation.

Despite these export successes, Ghana cannot be described as agriculturally self-reliant since it continues to import a lot of food crops and commodities from overseas. Ghana relies heavily on importation to supply its citizens with food products such as rice, wheat, sugar, and poultry (GAIN Report, 2012). About 1.3 million tonnes of rice were imported in 2020, compared to a million tonnes locally produced (GIPC, 2022). Again, in 2020, the country imported cereals such as wheat weighing 873,000 tonnes, soybeans weighing 84,333 tonnes, shea nuts weighing 49,963 tonnes, malt weighing 22,312 tonnes, apples totalling 11,160 tonnes, garlic weighing 7,081 tonnes, and tomatoes weighing about 4000 tonnes (GIPC, 2022). Moreover, it is reported that Ghana imported about $2.6 billion in agricultural products in 2022, and agricultural imports from the United States alone ($125.4 million) were about 5 per cent of the total imported value (ITA, 2023). Stumpf (2023) explained that the country's heavy reliance on imported goods stems from the fact that it has not leveraged its potential for internationally consumed food products such as mangoes, cashews, pineapples, and spices and has also not been able to meet the high-quality demands of food by the country's middle class.

4.4.2.1. Poor Irrigation Fuelling Heavy Importation.

However, part of Ghana's heavy reliance on food imports can be attributed to its agricultural productivity being largely rain-fed (FAO, 2015; GIPC, 2022). In fact, no more than 1 per cent of arable land can be described as irrigated, and this results in the variation of production across the country, according to the natural distribution of rainfall (Martey, Al-Hassan, & Kuwornu, 2012). In the southern part of the country, March to July and September to October are the two main rain seasons present, whereas the Northern part has only one rainy season from May to October (MOFA, 2022).

In 2017, the Ghanaian government introduced the One Village, One Dam Policy, which aimed to make agriculture less rain-dependent to increase yield and productivity all year round (GIPC, 2022). However, these irrigation projects have been described as "thirsty dams" which cannot hold water for more than two months (Kobina, 2023). The irregular access to water or irrigation facilities has several dire implications on yields and productivity, particularly the unimpeded spread of pests and plant diseases (Stumpf, 2023). Ghana was actually banned from exporting some varieties of vegetables to the European Union in 2015 due to recurring pest infestations (Stumpf, 2023). The lack of irrigational facilities coupled with the adverse effects of climate change means that the country's days of agricultural importation are far from over.

4.5. CONCLUSION.

This chapter illustrates how important the agricultural sector is to the country's economy and why the Plant Variety Protection Act has been a very serious concern to a majority of its citizens. Smallholder or small-scale farming is deeply rooted in Ghanaian culture and has stood the test of time, dating as far back as the pre-colonial era. For a system as formidable as this, any attempts at alteration or modification must be generous and flexible enough to initiate a change.

However, Ghana’s agricultural sector is struggling with problems such as irrigation, low levels of technology and other challenges associated with small-scale farming, which have culminated in the country's heavy reliance on food importation. Proponents of the Plant Variety Protection Act argue that all these problems can be solved directly or indirectly—through investments from foreign breeding companies. However, it is also important to understand the concerns raised by the opponents of the intellectual property regime on issues such as the rigidity in patenting criteria and biopiracy, the possibility of indigenous crops extinction, and the fear of foreign domination of

the country's patenting system. While trying to use the Plant Variety Protection Act to solve today's problems of agricultural productivity, it is also important to consider the issues raised by the opponents of the legislation, which focuses more on securing the country's best interests for its unborn generations.

5.0. IMPLEMENTING THE TRIPS REGIME IN GHANA – PLANT BREEDERS' RIGHTS.

Ghana's attempts to pass legislation to protect plant breeders' rights began in earnest in 2013 with the introduction of the Plant Breeders' Bill. This was in compliance with Article 27.3b of the TRIPS Agreement, which prescribes that member states must protect new plant varieties either through patents, an effective *sui generis* system—such as the PBR of the UPOV Convention—or a combination of both systems (WTO, 2000). Ghana's government decided to go with the second alternative provided by Article 27.3b of the TRIPS Agreement by joining the UPOV Convention, which offers a widely accepted *sui generis* system [the PVP] that protects patents on new plant varieties.

To join the UPOV-91 Convention, which is the most recent version of the UPOV, the organization requires states to first make their own legislation or laws which offer protection of breeders' rights and then deposit an "instrument of adherence or accession to the Convention", according to Article 34 of the UPOV-91 Convention (UPOV, 1991). Unfortunately, Ghana's first attempt at accession to the UPOV-91 Convention through Article 34 was unsuccessful, with the suspension of the Plant Breeders' Bill from the Ghanaian parliament in 2013 for further consultations[7]. This will be discussed in detail in the subsequent sections.

In 2020, after a change of government, the legislation resurfaced in the Ghanaian parliament, renamed the Plant Variety Protection (PVP) Bill, which later became an Act of parliament after

[7] See column written by Food Sovereignty Ghana on Ghanaweb: https://www.ghanaweb.com/GhanaHomePage/features/Investigate-Bagbin-Over-Plant-Breeders-Bill-335602

executive assent. According to Food Sovereignty Ghana in a press release published by PFAG (2020), the PVP Act was just a mere change of title, without any changes to the provisions of its predecessor, the Plant Breeders' Bill of 2013, as the government passed the Act without addressing the concerns raised by stakeholders.

This is a complex story, but it is highly unusual for legislation to essentially sit in a seven-year hiatus – especially legislation required under international trade law. These events were controversial and dramatic for Ghanian politics.

5.1. THE PLANT BREEDERS' BILL IN GHANA'S PARLIAMENT, 2013.

The Plant Breeders' Bill was first tabled in the House on 28th May 2013 (Appiah- Oppong, 2013). It was officially introduced to parliament for the first reading on Wednesday, 12th June 2013, following the standard legislative process of the Republic of Ghana (Bagbin, 2013). This Bill was introduced by Marietta Brew Appiah-Oppong, who was the Attorney-General and Minister responsible for Justice at the time. Following the law-making process and in fulfilment of Article 106(4) and (5) of Ghana's constitution and Order 179 of Parliament's Standing Orders, the Speaker referred the Bill to the Committee on Constitutional, Legal and Parliamentary Affairs for study and report (Bagbin, 2013). In November of 2013, the chairman of the committee presented the report to the house (ibid.), where he explained that aside from the exciting prospects new crop varieties would offer the agricultural sector, efforts made by Ghana's neighbouring countries to accede to the UPOV was also a driving factor behind the legislation (Adu-Gyamerah, 2013). It is reported by Adu-Gyamerah (2013) that all the MPs who contributed to the debate moved for the passage of the Bill apart from Dr. Mathew Opoku Prempeh, who drew the speaker's attention to

the opposing views advanced by Ghana National Farmers and Fishermen Association—and this is where the controversy began.

Leading to the Consideration Stage of the Bill, a number of groups including the Convention People's Party, the Peasant Farmers' Association of Ghana, and the Food Sovereignty Platform which consisted of the General Agricultural Workers Union, Vegetarian Association of Ghana, Rastafarian Council of Ghana, Centre for Indigenous Knowledge and Organizational Development, Ghana Muslim Mission, Catholic Bishops Conference, and the Ghana Trade and Livelihood Commission sent a petition to Parliament to suspend the Plant Breeders' Bill for further consultations with stakeholders (Ghana Web, 2013). In the petition, they raised concerns about the bill curtailing the rights and freedoms of peasant farmers, the erosion of crop diversity, and issues of biopiracy, just to mention a few. This petition gained significant momentum and attracted the interest of the masses. Core to this opposition was the concerns an interests of smallholder farmers, who play such a large role in Ghanian agriculture.

Public controversy and opposition grew at such a rate that at the Consideration Stage of the Bill, the Speaker of Ghana's Parliament was compelled by the overwhelming pressure from civil society organizations to suspend the passage of the Bill and refer the issue to a parliamentary select committee for further deliberations among various stakeholders. The suspension of the Bill was not enough to calm down the anxiety of these opposing groups, as serious protests against the Bill continued into the following year (Lamptey, 2014).

In fact, the legislation became a kind of "non-starter" in Ghanian politics as little effort was made to pursue deliberations or compromise, and the parliamentary select committee did little to support the Bill. Effectively, the legislation died, and Ghana remained in an ambiguous situation in relation to the TRIPS system on agricultural patent protection.

5.2. THE PLANT VARIETY PROTECTION ACT AND ITS PASSAGE.

In February of 2020, talks about the government's intention to reintroduce the Plant Breeders' Bill resurfaced as the government organized a two-day "sensitization workshop" to educate farmers on the provisions of the bill and demystify their fears and anxieties (Food Sovereignty Ghana, 2020). The workshop was done by the Registrar General's department, and it was an attempt to increase support for the legislation and to facilitate its smooth reintroduction into parliament. Interestingly, only farmers were formally invited, with no formal invitation to any of the civil society organizations, such as Food Sovereignty Ghana (FSG), that had opposed the previous Plant Breeders' Bill (Food Sovereignty Ghana, 2020). According to one of the representatives from FSG who attended the workshop on the second day, participants were not allowed to ask follow-up questions or make further inputs, whereas the organizers of the workshop took entrenched positions and were not transparent about policy concerns.

Justifying why Ghana should join the UPOV-91 Convention, for instance, the organizers of the workshop argued that Ghana's neighbouring countries were all joining the UPOV-91 Convention; thus, it should be good enough for Ghana (Food Sovereignty Ghana, 2020). Effectively, without more open avenues to participation and even the ability to ask follow-up questions, the sensitization workshop's purpose was clear – to pressure farmers into supporting the legislation.

Hearing that the government was planning to table the Bill before parliament the following month, FSG organized a press conference in August of 2020, where they tried to rally public opposition (GNA, 2020). Later, in August of 2020, there was a joint press release from the Centre for Indigenous Knowledge and Organizational Development (CIKOD), the Peasant Farmers Association of Ghana, the Ghana Muslim Council and other farmer-based groups in the Upper

East, Upper West and Northern regions opposing the likely reintroduction of the bill (Sore, 2020). They mounted more pressure on the parliament and even threatened to vote against MPs who would support the Bill during the 2020 general elections.

However, the bill was laid in parliament on the 9th of October 2020 by the Attorney-General, Gloria Akuffo (Parliament of Ghana, 2020). The new bill was renamed the Plant Variety Protection Bill. Following order 179 of the Standing Orders of the House, the Speaker referred the Bill to a parliamentary select committee for consideration and report (Parliament of Ghana, 2020).

On the 27th of October 2020, the Plant Variety Protection Bill was read for the second time in parliament, where a member of the committee stated that consensus had been reached among key stakeholders for the urgent passage of the bill—which was not really the case. In response, the Minority Leader, Haruna Idrisu, asked why the house had not been informed about the specific people involved in the consultation.[8] He added that the committee should provide the specific details of those consulted during the consideration stage of the legislation; however, this never happened.

Getting to the latter stages of the Bill's passage in parliament, another press conference was organized by opponents on the 2nd of November 2020, demanding its suspension for further consultation with relevant stakeholders (PFAG, 2020). This press conference saw the massive involvement of many groups and organizations, including the Peasant Farmers' Association of Ghana and the Platform, which consisted of Food Sovereignty Ghana (FSG), the General Agricultural Workers Union, the Vegetarian Association of Ghana, Rastafarian Council of Ghana,

[8] See col. 087 – 088 of Hansard of The Parliament of Ghana on October 27, 2020, at https://www.parliament.gh/docs?type=HS&P=dc

Centre for Indigenous Knowledge and Organizational Development, Ghana Muslim Mission, Catholic Bishops Conference, and the Ghana Trade and Livelihood Commission (PFAG, 2020). This effort was in vain because, on the 4th of November, the bill was read again for the third time after which it was passed *without any objections raised*. Essentially, after languishing for seven years, the government rushed the existing legislation through parliament based on a dubious public consultation process and a general sense of urgency.

Opposition did not end with the passage of the Bill. After the passage, the farmers and the other civil society groups channelled their focus on the president and appealed to him to refuse to assent to the bill (Amenuveve, 2020; Awuni, 2020); however, that also proved futile. A year later, in November of 2021, the Food Sovereignty Ghana organization filed a case in Ghana's Supreme Court to challenge the passage of the Plant Variety Protection bill (Modern Ghana, 2021); however, the case was thrown out more recently in June of 2023 on the basis that the court's jurisdiction was not properly invoked (Agyeman, 2023).

5.3. WHY THE RUSH?

Given the previous glacial pace of compliance with the TRIPS regime, what has changed since 2020? The government has supported its position on the legislation and its handling of opposition on the basis that passing the Bill was necessary. Publicly, the government has argued that the PVP legislation offers many potential benefits to the country and its agricultural sector. However, there are a number of different motivations at work.

5.3.1. Compliance With TRIPS Agreement.

One of the main justifications for the Plant Variety Protection Act was simply that Ghana was obliged to comply with the TRIPS Agreement. Article 27.3b stipulates that member states must protect plant varieties using either the patent system, an effective sui generis system, or the fusion of both systems (WTO, 2000). Ghana is fulfilling this portion of the TRIPS Agreement by joining the UPOV-91 Convention, which provides an effective sui generis system in the form of the PVP.

This is effectively where the "rubber meets the road" in the global trade regime. Despite the problems that the regime potentially creates for Ghanian agriculture and the lack of flexibility it allows member states, on a basic level, Ghana has little choice but to adopt the system. Like all developing states, it is under considerable pressure to do so. Part of the reason for the sudden, dramatic reintroduction and passage of the legislation may have been to manage Ghanian society – essentially seizing the initiative to impose these rules before the opposition could build and again block the legislation.

5.3.2. Protection of Breeders' Rights and Promoting Breeding Activities.

Perhaps making the best of a difficult situation, supporters of the Bill argue that there are benefits. The PVP legislation is designed to safeguard the rights of breeders or innovators in the agricultural sector and promote the plant breeding industry. The government makes the case that breeding is largely capital-intensive and requires long-term investment. Understandably, entrepreneurs are not willing to invest in a breeding industry where their investments have no protection (WIPO, 2020; Ayenan & Danquah, 2015). The government cited an example with breeding agencies such as the Crops Research Institute and other private plant breeders, which were unable to generate appreciable dividends for their sponsors because the country's laws did not protect the rights of

plant breeders prior to the introduction of the PVP legislation (Jordens & Button, 2011). With this, the government makes the case that protecting breeders' rights will promote breeding activities because breeders and sponsors alike have the confidence that they will benefit from their hard work.

5.3.3. Improve the Seed Industry.

Another point raised by the government to justify the passage of the Plant Variety Protection Act is that the legislation has the potential to transform the country's seed industry. While the risks to smallholders of multinational corporations taking ownership over seed varieties are large and hugely concerning to smallholders, the government argues that the Bill will attract the interests of established breeding firms and sponsors who will conduct more research into local crop varieties and develop new varieties that will be well suited to the needs and tastes of consumers (WIPO, 2020), Additionally, the government argues that the involvement of well-established and foreign breeding firms in the Ghanaian industry will engender the transfer of biotechnology and technical expertise, which will help improve the level of the seed industry in the country (WIPO, 2020). This improvement in the seed industry will enhance the country's ability and capacity to compete at the international level.

5.3.4. Benefits to Farmers.

Finally, the government of Ghana strongly posits that farmers will be the primary beneficiaries of this legislation, arguing that with new high-quality variety of seeds at low prices, which are also immune to pests and other crop diseases (Grigg, 2001; WIPO, 2020). farmers stand to profit. Perhaps, if this legislation had been passed before 2015, Ghana would have avoided the 2015 European Union ban on agricultural exports into Europe, premised on recurring pest infestations

(Stumpf, 2023). The government explained that the Bill would provide farmers with better seeds, resulting in increased yields *without any expansion in land size*. This will lead to high productivity and economic growth without the need for government involvement in tackling the smallholder problem more directly.

Moreover, the government argues that clause 20.3 of the Plant Variety Protection Act allows farmers to save and replant seeds of protected varieties on their farms—albeit for the purpose of subsistence—without any disturbances from right holders (WIPO, 2020)

5.4. ARGUMENTS RAISED AGAINST THE PROVISIONS OF THE PVP ACT.

Despite the push from the government and other proponents of the Bill, opponents have been unflinching in their stance against the PVP legislation. They have been very consistent with protests, press conferences and statements to drive home their point on the need to alter some provisions of the PVP Act, as they believe it does not benefit the Ghanaian agricultural industry. The following section will detail their reservations about the Plant Variety Protection Act.

5.4.1. Unfavourable Patent Criteria and Bio-piracy Issues.

The most important point raised by the opponents of the Plant Variety Protection Act is that the criteria or requirements for patents under the confines of the PVP legislation are unfavourable and unsuitable to the nature of agricultural innovation in Ghana (De Jonge, 2014). Clause 3 of the legislation outlines the conditions or requirements necessary to protect plant breeders' rights, including newness, distinctness, uniformity, and stability (WIPO, 2020), and these requirements must be met simultaneously. As discussed above, innovation within the African agricultural setting is gradual, incremental, and communal, involving observations, trial-and-error, and informal

sharing of knowledge among farmers (Kim et al., 2012; Oguamanam, 2008). This means that most Ghanaian crop varieties that have existed for years will be rendered non-patentable because they may not be able to fulfil all requirements of Clause 3 of the Plant Variety Protection Act, including newness, distinctness, uniformity, and stability. This undermines the efforts and contributions made by Ghanaian farmers in biotechnological innovations over the years (Oguamanam, 2015; Amanor, 2011).

Additionally, the non-patentability of existing Ghanaian crop varieties not only undermines the efforts of Ghanaian farmers in innovation but also exposes these crop varieties to bio-piracy (Oguamanam, 2015). Bio-piracy refers to the piracy or unlawful use of local or bio-cultural knowledge of vulnerable societies through the exploitation of Intellectual property systems or power by other entities (Arewa, 2006; Mgeboji, 2006). In light of bio-piracy concerns, Food Sovereignty Ghana (FSG) raises a point on how the current legislation does not have any provisions that promote benefit sharing or even mandate the patent applicants to provide details on the origin of new crop varieties. They explain that the germ plasm used for the development of some of these new crop varieties, such as cowpea, have their origins in Ghanaian communities. Yet, these communities will not benefit because there is no provision for benefit sharing in the current legislation (FIAN, 2022). This is a typical negative implication of the PVP legislation on bio-piracy-related issues within the country's agricultural sector.

5.4.2. Foreign Competition and the "Early Bird" Situation.

Another major concern raised against the Plant Variety Protection Act is that it opens the country's patenting scene to foreign domination (Amanor, 2011), which does not auger well for the agricultural industry. This concern stems from section 9 of the Plant Variety Protection Act, which extends patent rights to applicants from foreign countries, provided they are members of any

agreement that Ghana is also a member of (WIPO, 2020). This provision of the PVP legislation upholds international values of non-discrimination and national treatment, which is pretty commendable within global politics and diplomacy. Unfortunately, these values are not favourable to developing countries like Ghana, especially at the early stages of implementing the PVP system. This is because, unlike other advanced countries which have had decades of experience with the UPOV system prior to the introduction of the TRIPS Agreement, Ghana is relatively new to UPOV and lacks the infrastructure and expertise to navigate the intricacies of the UPOV system (Bortey & Mpanju, 2016; Rock, 2018). This also implies that there exists a pool of patent holders in such developed countries who are ready to acquire patents now that the legislation has been made. As a result, it is very plausible that big firms and entrepreneurs from foreign countries will overrun the patent system in the country, resulting in the "early bird" situation where almost every patent in the agricultural sector is owned by foreign nationals and firms (Cleveland & Murray, 1997).

5.4.3. Extinction of Indigenous Crop Varieties.

Another concern raised against the Plant Variety Protection Act is the risk of losing indigenous crop varieties as a result. With this legislation, the government seeks to open the seed market to attract foreign and well-established breeding agencies; however, it is no secret that the primary aim of such agencies or firms is profit maximisation before anything else. Most of such seed breeding agencies invest in plant varieties which have global economic value, such as corn, wheat, rice, and potatoes, just to name a few (Oguamanam, 2015). More research goes into the development and advancement of these plants to the neglect of indigenous crops, which do not necessarily carry economic value. This renders such crops orphan and leads to their extinction since most farmers will be more inclined to cultivate crops with economic value, which means more income for them (Oguamanam, 2010; Oxfam, 2008; Altieri, 2002; Rock & Schurman, 2020).

An example is cited in Kenya, where ornamental plants such as roses had the highest number of patents compared to food crops such as maise, wheat, sorghum and Barley as of 2013 (KPEHIS, 2013). In extreme cases, as Dutfield (2008) explains, traditional or indigenous crop varieties are disparaged and eventually removed from the list of seeds approved by the State, making it difficult to find certain varieties of some crops.

In Ghana, this reality is not far from possible because a study done by Bortey and Mpanju (2016) revealed that in Ghana, the most important determinant for growing a particular crop or variety is easy access to seeds rather than the most preferred variety in the community. Cost of seeds, yield, and quality of seeds are less important determinants (ibid.). This behaviour of planting accessible seeds in combination with the focus on economically valuable seeds by breeding firms means that less economically valuable seeds stand the risk of extinction following the passage of the PVP legislation. The country stands the risk of having its food variety limited in the future because food choices could be controlled by these breeding firms (Oguamanam, 2015).

5.4.4. Ambush On Ghanaian Sovereignty.

Another important point that the opposition has advanced has to do with the State's sovereignty and how much control the state had in the formulation of this legislation. Recent developments have shown a trend where private foundations and aid donors have sought to use the media and journalists, in particular, to push the PBR agenda. One example is the Open Forum on Agricultural Biotechnology in Africa (OFAB)—funded by the Bill and Melinda Gates Foundation—which trains journalists and editors to propagate pro-biotechnological ideas and lobby for biosafety policies in countries such as Ethiopia, Ghana, Kenya, Nigeria, Tanzania and Uganda (AATF-OFAB, 2017). Also, in 2017, the US Embassy in Ghana held a 5-day media outreach program to train Ghanaian journalists to champion pro-biotechnology agendas in the country (Rock &

Schurman, 2020). Journalists are very influential in every jurisdiction and play a major role in shaping national policies. Judging from their sources of training and funding—the US and the Bill and Melinda Gates Foundation—which have foreign origins, it is unclear whose voice is actually being amplified by the works of these journalists. Opponents of the Bill are very disappointed because it appears these journalists have managed to convince parliament to do the will of non-nationals against the interests of nationals. This makes one wonder who actually makes laws and policies in the country.

Regardless, it must be remembered here that these kinds of efforts to shape how African states perceive their "interests" in intellectual property protection occur in an environment where those states are under considerable external pressure from the trade regime and multinational corporations to simply comply with the TRIPS system.

5.4.5. UPOV-91 is Not the Only Effective *Sui Generis* System.

One particularly interesting concern raised by the opponents is the selection of UPOV-91 as the standard approach for Ghana. In a press release by Food Sovereignty Ghana (PFAG, 2020), they expressed their disappointment and confusion on why the Ghanaian government was so bent on joining the UPOV Convention, especially when it is not the only effective *sui generis* system—and does not favour the interests of the country. The group has stated that the provision in article 27.3b of the TRIPS Agreement, which prescribes the member states to protect plant varieties with an effective *sui generis* system, is not limited to the UPOV only (Food Sovereignty Ghana, 2020) and cites examples of Thailand, Malaysia, and India which have designed Plant Variety Protection (PVP) systems with maximum flexibility.

Ghana could have tried other *sui generis* systems such as the African Model Law (Ekpere, 2003), the Utility Model (Kim, Lee, Park, & Choo, 2012), and CoFaB (Sahai, 2000), for instance, which provide more flexibility for developing economies. However, the government seems to have chosen the most limiting approach, albeit the one favoured by global interests.

5.4.6. Conflict With Other International Treaties.

Opponents also argue that Ghana's adoption and implementation of the legislation is a violation of some of the international agreements the country is already a member of. Ghana is a signatory of international treaties such as the Nagoya Protocol, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), and the United Nations Declaration on the Rights of Peasants (UNDROP) (FIAN, 2022). All these treaties protect the rights and freedoms of peasant farmers and allow them to sell and exchange seeds freely without any punishments. In contrast, the UPOV-91 Convention does not allow for peasant or smallholder farmers to exchange or sell seeds. In fact, this PVP legislation pronounces a minimum jail time of 10 years according to clause 60 (WIPO, 2020), which is even stricter than in advanced countries like the US [2 years] where big firms such as Monsanto operate. In a situation where there is going to be conflicting directives, it is worth noting that the government has chosen to pass a Bill which protects the rights of plant breeders over the rights of its own peasant farmers instead of creating a system which could benefit both parties.

5.5. CONCLUSION.

This chapter recounted the dramatic trajectory of plant protection in Ghana from the Plant Breeders' Bill (PBB) of 2013 to the current Plant Variety Protection (PVP) Act of 2020. This chapter highlighted the change in the government's posture from a democratic decision-making

system in the PBB case to a more paternalistic decision style in the PVP case, where the government obstinately pushed the PVP legislation through parliament. Despite the numerous concerns and risks pointed out by opposers of the legislation, the government felt it had no choice and could not be left behind since some of the country's neighbours had already enacted similar legislation.

Considering the issues raised against the legislation and the deliberate disregard of other better options, it is not hard to agree with the PVP opposers that the government chose the worst possible system for Ghana.

6.0. CONCLUSIONS.

This thesis examined why plant breeders' rights and protection of the same has been a “thorny situation” in Ghana. It also sought to draw out lessons from the Ghanaian PVP story for the benefit of other countries in the global south, where there is similar opposition to laws such as the PVP.

Historically and culturally, Ghana's agricultural sector has been characterised by smallholder or small-scale farming, and this dates as far back as pre-independence or the Gold Coast era. In Chapter Four, this research provides a historical account of attempts made by various governments since the country's independence to modify this system of smallholder farming to a commercial or large-scale level of agricultural production to create more jobs, increase production to accommodate the growing food demands of the population, and also to bolster economic growth through more industrial farming practices. However, as argued above, the small-scale farming culture in Ghana and the politics that support it have been very resilient, as reform attempts have failed, and the country is still heavily reliant on small-scale farming for most of its food production.

Ghana also has a heavy reliance on food imports, which is one major implication of the small-scale system of farming because it leads to low levels of productivity. The lack of irrigational facilities to support the two main rainy seasons of the country is a factor in the low levels of agricultural productivity in the country. Proponents of intellectual property protection in agriculture see the Plant Variety Protection legislation as a solution to these underlying problems; when breeders' rights are protected, new seed varieties will be able to withstand pest infestations and require less irrigation to thrive (Grigg, 2001; WIPO, 2020; Shafiwu, Donkoh & Abdulai, 2022)

Despite this line of argument, opponents of the PVP legislation and a large population of Ghanaian farmers have not been fully convinced. This is because some provisions of the legislation pose

serious risks for many farmers – due to the rigid nature of the TRIPS Agreement and the way it has been implemented in Ghana.

As was argued in Chapter 2, the WTO's approach to TRIPS promotes the interests of developed countries through both the explicit exercise of power over developing countries and through its "discursive exercise of power" (Hopf, 1998) in terms of how it defines the norms surrounding intellectual property in a way that privileges the interests of multinational corporations at the expense of managing concrete, real-world problems in developing countries. West (2012) points out that in such cases, the indigenous knowledge processes and protection frameworks of developing nations are dismissed as deviant or, in some sense, "protectionist", thereby requiring transitional periods to adopt global norms and ongoing oversight.

In the case of agricultural IP protection, the opponents of the PVP Legislation—which emanates from the WTO's TRIPS Agreement—have complained that its requirements of novelty, distinctness, uniformity, and stability are unattainable by the average Ghanaian farmer. These standards do not conform with the nature of agricultural innovation in Ghana, which is gradual, informal, incremental, and communal in nature. Consequently, this problem renders most of the country's existing crop varieties non-patentable and vulnerable to biopiracy. For a country that has a very resilient culture of smallholder farming and depends on that system for most of its agricultural production, a law that does not favour the interests of smallholder farmers was inevitably going to be controversial. Smallholders are politically powerful, and the adoption of the TRIPS regime is understandably worrying for them.

Compliance with the TRIPS Agreement and the passage of the PVP legislation is partly dependent on the country's existing policy-making structure. This follows Filomeno's (2014) theory (see chapter two) that countries that use a corporatist process of IP decision-making are more likely to

have weaker IP protection laws, whereas states that use a rather pluralist or a state capture and abstention pattern are more likely to have stronger IP protection laws. This is evident in the case of Ghana's previous Plant Breeders' Bill (PBB) of 2013, which was suspended from parliament because the government employed a corporatist decision-making process where many stakeholders were involved in the decision-making. The PBB was unpassable in that context, resulting in the extremely odd situation of legislation effectively sitting dormant for seven years.

After a change of government in 2016, the decision-making process changed to one that appears to be more of the "state capture or abstention style", where specific government agencies took decisions without the input of stakeholders, and ultimately, state resources were used to limit and block internal domestic political opposition. This permitted the easy passage of the recycled PBB in the new name of the Plant Variety Protection (PVP) Bill. This new government is known for its state capture or abstention style of decision-making, and it is not surprising how the term "state capture" has gained much popularity within Ghanaian politics, especially this year[9]. The government has used this style in other areas – for example, the abolishment of the collection of road tolls in 2022 without listening to the concerns of stakeholders (Ahinsah-Wobil, 2022). It is very clear that the PVP law was passed not necessarily because it met the needs of the people but because of the government's style of decision-making and because, ultimately, the government supported the policy goals of global agricultural interests and institutions.

While many developing countries have encountered similar controversies in the politics of TRIPS implementation, the long, drawn-out struggle in Ghana is notable. In the West African region,

[9] See news article where former president Mahama accuses the current government of state capture at https://www.modernghana.com/news/1331947/akufo-addos-govt-must-be-held-accountable-for.html

Ghana has simply been a “late adopter” of the kind of agricultural patent protection system desired by global interests.

The reasons for this seem clear. Despite its many shortfalls, Ghana's smallholder farming system is very resilient and difficult to change, and those smallholding farmers were opposed to the implementation of the IP regime, but they remain so. The requirements of the PVP legislation – the particular nuances of the TRIPS-mandated system Ghana has decided to adopt are particularly rigged and run counter to the reality of how agricultural innovation has occurred there – it simply is not flexible enough to convince farmers and the people to accept the regime. Ultimately, the PVP legislation only became law because the state and its agencies forced it through parliament in part because of a growing sense that Ghana was lagging behind in TRIPS compliance.

For Ghanaian farmers and the agricultural sector in general, the adoption of this legislation imposes real costs and dangers. These include the possibilities of bio-piracy of indigenous technology by foreign firms, monopoly of the seed market leading to high costs of seeds, and extinction of indigenous crop varieties which do not necessarily carry economic value.

This paper has mainly argued that the controversies around the passage of the PVP legislation and the protection of breeders’ rights in Ghana mainly can be attributed to the inflexibilities inherent in the TRIPS Agreement and the UPOV-91 Convention. Although the “harm” has already been caused, laws and policies can always be reviewed and modified to meet the real needs of the people.

There are general lessons in this. Implementing the controversial aspects of WTO trade law seems best served by a top-down “industry capture” style of policymaking – domestic opposition and democracy have to be managed rather than embraced. Choosing an IP protection scheme that is

most in line with the demands of multinationals and least flexible for local needs is probably a poor choice from both a policy perspective and a poor change from the perspective of getting legislation passed at all.

6.2. RECOMMENDATIONS.

For a developing nation in the global south like Ghana, it is imperative that international laws WTO rules, are flexible enough to adapt to the local setting. Indeed, based on this in-depth examination of the situation in Ghana, it is possible to outline suggested reforms to the system that might enjoy broader political support and perhaps even be "good" for Ghanaian agriculture.

For example, Article 27.1 of the TRIPS Agreement, which demands the "newness" of crop varieties as a requirement for patents, could or should have been modified so that existing Ghanaian crop varieties with unknown or untraceable origins of creators—because of the gradual and incremental process of agricultural innovation—could also qualify for patents and escape the risk of biopiracy. Essentially, existing seeds and agricultural IP could have remained available for the free use of Ghanaian farmers. It is actually hard to understand how such a change would conflict with the basic purposes of the TRIPS regime unless part of the goal was to facilitate bio-piracy.

Similarly, the Plant Variety Act could or should have included a provision which demands that foreign firms—which claim that their plant varieties are new—provide the origin of propagators to prevent biopiracy of existing Ghanaian crop varieties.

For a specific number of years, the TRIPS Agreement could allow developing countries that are fairly new to IP protection in agriculture to either determine which crop varieties can be patented

or should be allowed to put a quota on what percentage of patents can be given to foreign plant breeders. This could help mitigate the complete overtake of the agricultural system and allow Ghanaian breeders to benefit from the policy.

The bottom line is that Ghana had or has the option to choose other effective *sui generis* systems that are well suited to its agricultural setting, or it could even create its own system. There exist several effective *sui generis* systems, such as the African Model Law (Ekpere, 2003), the Utility Model (Kim, Lee, Park, & Choo, 2012), and CoFaB (Sahai, 2000), for instance, which Ghana can adopt, since they provide more flexibility for developing countries as compared to the UPOV-91 system. Alternatively, Ghana can learn from the examples of countries such as Thailand, Malaysia, and India, just to mention a few, which have designed their own Plant Variety Protection (PVP) systems with maximum flexibility (Food Sovereignty Ghana, 2020).

Finally, the opposition to the PVP legislation, which remains considerable, has argued that the government should put more effort into dealing with the "real issues" affecting agricultural productivity, things like post-harvest losses. The government could invest in storage facilities to enable farmers to store excess food. The government could focus more on providing good road networks to help speed up the transportation of farm produce to major markets in the city. Additionally, the government could put more effort into the provision of irrigation facilities, such as dams in farming communities, to augment the two main rainy seasons in the country and ensure that farmers have access to water all year round. All these things would also help increase agricultural productivity without imposing the kind of risks on small-holding farmers that the PVP legislation does.

Finally, the government of Ghana should adopt decision-making styles that consider the concerns and inputs of various stakeholders. The problem of low agricultural productivity in recent times

presents a critical juncture in public policy (Pierson, 2000), where the government must make a serious decision that will have long-term, reinforcing implications. As Pierson (2000) advises, governments must be careful in such instances because policy changes can be difficult or impossible to reverse. In issues such as agriculture, where there exist many varying interests and opinions, it is important that the decision-making process takes the concerns of all stakeholders into consideration so that a proper consensus can be reached. To put it bluntly, Ghana has chosen an IP regime that may have very serious and damaging long-term consequences.

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