An Assessment of the Intellectual Property Regime for the Medicinal Cannabis Industry in Barbados

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TradeLab

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International rules on cross-border trade and investment are increasingly complex. There is the WTO, World Bank, and UNCTAD, but also hundreds of bilateral investment treaties (BITs) and free trade arrangements ranging from GSP, EU EPAs and COMESA to ASEAN, CAFTA, and TPP. Each has its own negotiation, implementation, and dispute settlement system. Everyone is affected but few have the time and resources to fully engage. TradeLab aims to empower countries and smaller stakeholders to reap the full development benefits of global trade and investment rules. Through pro bono legal clinics and practica, TradeLab connects students and experienced legal professionals to public officials especially in developing countries, small and medium-sized enterprises, and civil society to build lasting legal capacity. Through 'learning by doing' we want to train and promote the next generation of trade and investment lawyers. By providing information and support on negotiations, compliance, and litigation, we strive to make WTO, preferential trade and bilateral investment treaties work for everyone.

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About the University of the West Indies TradeLab Clinic

Dr. Jan Yves Remy and Dr. Ronnie Yearwood supervise one of TradeLab's newest clinics which is being offered as a collaborative effort between two departments of the University of the West Indies Cave Hill Campus: the Shridath Ramphal Centre for International Trade Law, Policy & Services (SRC) and the Faculty of Law (Cave Hill).

The SRC is the leading centre devoted to assisting the Caribbean region with issues of international economic law, regionally and on the global front, and is home to the master's in International Trade Policy (MITP). The Faculty of Law at the Cave Hill Campus (in Barbados) is the oldest law faculty of the University of West Indies's three campuses, with the other two campuses located in Trinidad (St. Augustine) and Jamaica (Mona). The TradeLab pilot clinic is being offered as an elective to third-year students from the Faculty of Law.

Dr. Remy is the Deputy Director of the SRC and teaches on the MITP course; and Dr. Yearwood is a Lecturer in Law in the Faculty of Law, at The University of West Indies, Cave Hill Campus (UWI).

As the Academic Supervisors, Dr. Remy, and Dr. Yearwood, signed up students to work in teams of three or four. They worked with mentors of the TradeLab network as well as Research Fellows from the TradeLab alumni who assisted the students with research tasks.

This memorandum was completed by one of two student teams working for beneficiaries from the Caribbean region.

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ABBREVIATIONS

ABS	Access and Benefit-Sharing Clearing-House
BIT	Bilateral Investment Treaty
BMCLA	Barbados Medicinal Cannabis Licensing Authority
CBD	Convention on Biological Diversity
CFIA	Canadian Food Inspection Agency
CFR	Code of Federal Regulations
CLA	Cannabis Licensing Authority - Jamaica
CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum
DDA	Dangerous Drugs (Amendment) Act, 2015 - Jamaica
EC	European Community
EPA	Economic Partnership Agreements
EU	European Union
FCA	Federal Cannabis Act, 2018
FDI	Foreign Direct Investment
ft	Feet
FAO	Food and Agriculture Organization of the United Nations
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GI	Geographical Indication
ICA	Colombian Agricultural and Livestock Institute
IO	International Organization
IP	Intellectual Property
IPEA	International Preliminary Examining Authority
IPR/IPRs	Intellectual Property Right/s
JMCC	Jamaica Medical Cannabis Corporation
JIPO	Jamaica Intellectual Property Office
mi^2	Square miles
OECD	Organization for Economic Co-operation and Development

PBR/ PBRs	Plant Breeder's Right
PBRA	Plant Breeders Rights Act 1990
PCT	Patent Cooperation Treaty
PVP	Plant Variety Protection
PVPA	Plant Variety Protection Act, 1970
PVR	Plant Variety Right
R&D	Research and Development
SIDS	Small Island Developing States
TC	Tissue Culture
THC	Delta-9-Tetrahydrocannabinol
TRIPS	The Agreement on Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UPOV	International Union for the Protection of New Varieties of Plants
US	United States
USPTO	United States Patent and Trademark Office
UWI	University of the West Indies
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

EXECUTIVE SUMMARY

[1] The value of the medicinal cannabis industry globally is expected to reach US $ 70.6 billion by 2028.[1] The increased legalisation of cannabis for medicinal use and the growing adoption of these products for the treatment of chronic diseases are the key factors driving this market[2] Within the Caribbean region, the medicinal cannabis industry has generated significant economic revenue. Jamaica, as an example has seen trade between medicinal cannabis licensees valued at US$1.34 Million from May 2019-July 2020.[3] Following the success of Jamaica, many have followed to establish their own medicinal cannabis industry, including Antigua and Barbuda, and Barbados. Though these industries are nascent, the profitability of the industry has the potential to bring investors to Barbados as a new entrant in the medicinal cannabis market.

[2] Intellectual Property Rights (IPRs), play an important role in the medicinal cannabis industry by granting protection of intellectual property to potential investors and companies. Businesses may seek to gain an advantage by purchasing or investing in companies holding valuable IPRs.[4] The key question in this memorandum, is how will the IPRs in the medicinal cannabis industry lead to the promotion of trade and investment for new entrants, such as Barbados. IPRs can be used as a trade facilitation tool. Arguably, there is a direct link between trade and IPRs, as well as foreign investment and IPRs. Both trade and foreign investment through IPRs often attract economic revenue for a State.

[1] Grand View Research, 'Legal Marijuana Market Worth $84.0 Billion by 2028- CAGR:14.3%' (2021) < https://www.grandviewresearch.com/press-release/global-legal-cannabis-market > accessed 28 April 2021
[2] Ibid, at 2.
[3] Jamaica Observer, 'Trade Between Cannabis Licensees'(2020) < https://www.jamaicaobserver.com/news/trade-between-cannabis-licensees-at-us-1-34-million-says-cla_201917?profile=1470 > accessed 10 June 2021
[4] John Rebchook, 'Intellectual Property Takes on Growing Role in Cannabis Industry Deals' (MJBizDaily 2021) < https://mjbizdaily.com/intellectual-property-takes-on-growing-role-in-cannabis-industry-deals/ > accessed 28 April 2021

[3] The purpose of this memorandum is to assess the IPR regime for the medicinal cannabis industry, and in turn, determine how this regime can promote trade and investment for the Barbadian medicinal cannabis industry. This memorandum will introduce and assess international agreements that are key to the medicinal cannabis industry such as the 1991 Act of the International Union for the Protection of New Varieties of Plants (UPOV) and the Nagoya Protocol. UPOV provides a sui generis form of intellectual property protection, which has been specifically adapted for the process of plant breeding. The Nagoya Protocol is a supplementary agreement to the Convention on Biological Diversity (CBD). It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD - the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

[4] These agreements may be beneficial to the Barbadian medicinal cannabis industry, by potentially bolstering their IPR regime to encourage the promotion of trade and investment. This proposal to accede to these international agreements will take into account the potential advantages as well as challenges Barbados may face in becoming a party to these agreements. Additionally, this memorandum identifies amendments to Barbados' Protection of New Plant Varieties Act, and the Drug Abuse (Prevention and Control Act). In formulating these proposed recommendations, this memorandum was laid out in the following way:

[5] **Chapter 1** examines the relationship between IPRs and trade and IPRs and foreign direct investment. This chapter also seeks to establish the economic value of IPR-intensive industries.

[6] **Chapter 2** introduces the medicinal cannabis industries in the Caribbean, primarily within Jamaica, Barbados and Antigua and Barbuda. The medicinal cannabis legislation within these countries is examined for existing similarities and differences.

[7] **Chapter 3** looks at the domestic framework of IPRs in Barbados, by examining the Patent Act and the Protection of New Plant Varieties Act. The requirements for acquiring a patent

and qualifying for a plant breeder's right found within these laws, are laid out. This chapter also discusses the protection of the extraction process of cannabis and the protection of unique local cultivar phenotypes in Barbados. The chapter concludes with a brief assessment of Jamaica's IPR regime, as a comparison to Barbados' regime.

[8] **Chapter 4** lays out the international framework of IPRs by assessing the treaties that Barbados is a party to, and the treaties that Barbados is not yet party to. Within these international agreements, the IPRs relevant to the medicinal cannabis industry are analysed. This chapter also highlights the benefits of the UPOV Convention and the Nagoya Protocol, and a strong case is made for why Barbados should accede to these international agreements.

[9] **Chapter 5** analyses how IPRs are protected in the medicinal cannabis industries in the United States, Canada and Columbia. The relevant legislation in each of these countries is examined with focus on specific IPRs like patents, trademarks and plant breeder's rights. Ultimately, this chapter seeks to establish which model industry may be most beneficial for Barbados' medicinal cannabis industry to promote trade and investment.

[10] **Chapter 6** outlines the recommendations for Barbados to amend some provisions in their domestic IPR legislation and to join the international agreements of 1991 UPOV, and the Nagoya Protocol. The benefits and challenges associated with joining these international agreements, and the necessary criteria for becoming a party to UPOV are provided. The chapter concludes by summarising the major findings of the memorandum and notes that it may be used to assist Barbados in promoting trade and investment in their medicinal cannabis industry.

CHAPTER 1: AN INTRODUCTION TO INTELLECTUAL PROPERTY RIGHTS

- ***Section 1.1*** *explores the relationship between intellectual property rights and trade.*
- ***Section 1.2*** *explores the relationship between intellectual property rights and foreign direct investment.*

1.1 THE RELATIONSHIP BETWEEN INTELLECTUAL PROPERTY RIGHTS AND TRADE

[11] Intellectual property rights (IPRs) and economic development are conceptualised as being directly related in that IPRs play a key role in driving innovation and economic growth.[5] IPRs are increasingly pervasive in today's economy because 'the generation and management of knowledge plays a predominant role in wealth creation, particularly when compared with traditional factors of production like land, labour and capital.[6] For example, global cross-border exports of commercial knowledge and technology-intensive goods and services reached an estimated $4 trillion in 2014 .[7] Some therefore argue that IPRs are important for the future economic growth and development of states.[8] The relationship between IPRs and economic growth can also be characterised as the transmission gear at the nexus of innovation, business and law.[9]

[12] IPRs have impacted global trade since 1995 with the introduction of the TRIPS agreement at the Uruguay round. The purpose of the TRIPS Agreement is to provide adequate and

[5] Stephen Ezell and Nigel Cory, 'The Way Forward for Intellectual Property Internationally' (Information Technology & Innovation Foundation, April 25 2019) < https://itif.org/publications/2019/04/25/way-forward-intellectual-property-internationally > accessed 24 April 2021
[6] Ibid, at 5
[7] Ibid, at 5
[8] Diva Rai, 'Intellectual Property Rights: An Overview of Leading Organizations and Conventions' (IP Leaders, 8 October 2019) <https://blog.ipleaders.in/leading-international-instruments-related-to-intellectual-property-rights/#Features_of_the_TRIPS> accessed 22 March 2021
[9] Joseph Wyse, Gilad Luria, 'Trends in Intellectual Property Rights Protection for Medicinal Cannabis and Related Products' (2021) Journal of Cannabis Research < https://doi.org/10.1186/s42238-020-00057-7 > accessed 22 March 2021 pg. 2

effective protection for IPRs to reduce impediments to international trade and promote global competition.[10] The Economist Guide to Intellectual Property, states that IPRs directly affect states' economies. In March 2013, the US Bureau of Economic Analysis changed the calculation of GDP to capture output based on IPRs. This change had an effect of increasing the US GDP by 3%.[11] This may prove, that economic output from IPRs should be incorporated into a state's GDP. The US now earns almost as much from royalty and license fees as it does farm exports.[12] The impact of IPRs on the US economy was also highlighted in a Congressional Research Service Report. In 2014, according to this Congressional Report, IPR-related merchandise exports amounted to $842 Billion (52% of total US merchandise exports), IPR-intensive industries accounted for $6.6 trillion in value to the US economy, this is more than one-third of the US GDP.[13] It is evident that IPR has the potential to significantly benefit a state's economy. IPR-intensive industries are generating a high volume of economic revenue, making these industries a lucrative business.

[13] IPRs affect international trade flows when knowledge-intensive goods move across national boundaries. The importance of IPRs for trade has gained significance, as the share of knowledge-intensive or high-technology products in total world trade has doubled between 1980 and 1994 from 12 per cent to 24 percent.[14] IPRs have a vital role in growing the economies of developed and developing states, in spurring innovation, in giving large and small firms a range of tools to help drive their success, and in benefitting consumers through a continuous stream of innovative products and services.[15] Therefore, as governments work to stabilise their economies and stimulate economic growth, the GDP

[10] TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994)
[11] Stephen Johnson, *Guide to Intellectual Property* (The Economist- Public Affairs 2015) 26
[12] Alan Beattie, 'Intellectual Property: A New World of Royalties' (Financial Times 2012) < https://www.ft.com/content/76166b6a-03ca-11e2-9322-00144feabdc0 > accessed 24 April 2021
[13] Congressional Research Service, 'Intellectual Property Rights and International Trade' (CRS Report 2020) < https://fas.org/sgp/crs/row/RL34292.pdf > accessed 24 April 2021
[14] Carsten Fink and Carlos Braga, 'How Stronger Protection of Intellectual Property Rights Affects International Trade Flows' in Carsten Fink and Keith Maskus (1st edn), *Intellectual Property and Development- Lessons from Recent Economic Research* (Oxford Press 2005) 19
[15] International Chamber of Commerce, 'Intellectual Property: Powerhouse for Innovation and Economic Growth' <https://iccwbo.org/content/uploads/sites/3/2011/02/Intellectual-Property-Powerhouse-for-Innovation-and-Economic-Growth.pdf > accessed 24 April 2021

contribution, employment and trade benefits of robust IPR-based sectors will be more important than ever.[16] In the G8 states, the copyright-based industries and interdependent sectors alone account for approximately 4-11% of GDP.[17] These sectors also produce a substantial number of jobs- approximately 3-8% of all employment within the G8.[18]

[14] As an example, China who is often seen as infringing IPR, is now being considered as an IPR powerhouse, as IPRs are contributing to China's economic development.

Case Study 1[19]

China- From Infringement to an Intellectual Property Industry

Since the Reform and Opening Up, the Chinese Government has attached great importance to IPR.

China is often associated with a poor record of prosecution of "knock-offs" in the fashion and entertainment industries, with a history in software piracy. However, according to OECD statistics, between 1995-2005 China's international patent filings grew by an annual average of 33%. China has entered the top 15 patent filing countries in 2005 and continues to develop rapidly in terms of the importance of IP. The value-added of Chinese copyright industries in 2004 was 788.4 billion RMB, this takes up 4.9% of national GDP. In 2016, China has now received 553,000 patent applications and 1,740,000 trademark registrations. The Intellectual Property Court of China's Supreme People's Court has also been established in 2019, hearing a total of 1945 cases annually. Of these 174 (8.9%) involved a foreign element.

[15] However, there is still criticism on whether IPRs are actually influential on economic growth. It has been argued that states like India and Brazil have all managed to attain

[16] Ibid, at 15
[17] Ibid, at 15
[18] Ibid, at 15
[19] This case study has been adapted from: Stephen Johnson, *Guide to Intellectual Property* (The Economist- Public Affairs 2015) 37

relatively high levels of economic growth without strong IPRs.[20] As an example, the success of the Indian pharmaceutical industry that began in the 1970s was achieved by means of state policy prohibiting the patenting of medicinal products. The view is that a sound agricultural policy or industrial policy are more likely to stimulate economic growth than IPR laws.[21] It is also argued that several states with weak IPR policies have achieved rapid economic growth and development over the past five decades. For these particular states, the strengthening of IPRs occurred after the initial stages of increased growth and development.[22]

[16] Despite these criticisms, to potentially maximize economic development, states may align their laws with the prevailing IPR norms and standards. Domestically implementing the obligations set out in the TRIPS Agreement provides stability, assists domestic inventors, and sends a positive signal to foreign investors that IPR is critical to economic development particularly for developing states.[23]

[17] In a study commissioned by JIPO (Jamaica Intellectual Property Office) in 2005, the copyright sector contributed in producer's values US$464.7 million, which amounted to 4.8% of Jamaica's GDP.[24] This may indicate that an IPR-intensive industry is also beneficial to the Caribbean, especially Jamaica, where IPRs significantly contributed to their economy. In relation to Barbados, the US Department of State, in their 2020 Investment Climate Statement notes that Barbados has a good legislative framework governing IPR, but enforcement needs improvement.[25] Furthermore, Barbados remains on the Office of the United States Trade Representative Special 301

[20] Jerome Reichman, 'Intellectual Property in the Twenty-First Century: Will the Developing Countries Lead or Follow' in Mario Cimoli and Giovanni Dosi (et al) (1st ed), *Intellectual Property Rights-Legal and Economic Challenges for Development* (Oxford 2014) 111
[21] Ibid, at 20
[22] Bryan Mercurio, 'Intellectual Property Rights, Trade and Development' in Yong-Shik Lee, Gary Horlick et al. (1st edn), *Law and Development Perspective on International Trade Law* (Cambridge Press 2011) 49
[23] Ibid, at 22
[24] Adrienne Thompson, 'Intellectual Property in Latin America and the Caribbean: Impact on Productive Development, Innovation and Progress' (JIPO) < http://www.sela.org/media/3206012/adrienne-thompson.pdf > accessed 25 April 2021
[25] U.S. Department of State, '2020 Investment Climate Statements: Barbados'
< https://www.state.gov/reports/2020-investment-climate-statements/barbados/ > accessed 25 April 2021

Watch List in 2020 for failing to provide effective IP protection and enforcement for potential US investors.[26] This could potentially hinder investment particularly in the area of IP as this list cautions US investors where to invest.

Each Caribbean state has some form of IPR where enforcement of these rights varies in accordance with the government's policy and interests.[27] It has been proposed that CARICOM as a region should establish a regional intellectual property office which would indicate to its members and potential investors that the Caribbean is serious about pursuing long-term trade goals, [28] including IPR protection to boost trade and investment.

1.2 THE RELATIONSHIP BETWEEN INTELLECTUAL PROPERTY RIGHTS AND FOREIGN DIRECT INVESTMENT

[18] The relationship between IPRs and Foreign Direct Investment (FDI) inflows in developing states are quite complex and cannot simply be summed up as positive. Firms are more likely to invest when host states have strong IPR protection as this protection reduces risks of any subsequent imitation which then leads to a larger demand for protected products.[29] IPRs positively affect the volume of FDI by enabling foreign firms to compete effectively with indigenous firms that possess ownership advantages.[30] IPRs also affect the composition of FDI.[31] Strong IP protection may encourage FDI in high- technology sectors, where such rights play an important role. In addition, it may shift the focus of FDI projects from distribution to manufacturing. Besides positively affecting the volume of FDI, IPRs also influence where multinationals decide to locate their investment.[32] IPRs are territorial

[26] Office of the United States Trade Representative, 'Special 301 Report' (2020) < https://ustr.gov/sites/default/files/2020_Special_301_Report.pdf > accessed 25 April 2021 76

[27] Intellectual Property Watch, 'Inside Views: Promoting Caribbean Intellectual Property Law' (2011) < https://www.ip-watch.org/2011/08/08/promoting-caribbean-intellectual-property-law/#comments > accessed 25 April 2021

[28] Darryl Wilson, 'The Caribbean Intellectual Property Office (CARIPO): New, Useful and Necessary' (2011) 19(3) Michigan State Journal of International Law < https://core.ac.uk/download/pdf/228469188.pdf > accessed 25 April 2021 584

[29] Primo Braga, C.A. and C. Fink, *'Relationship between Intellectual Property Rights and Foreign Direct Investment'*. (1998, Duke Journal of Comparative & International Law 163(9): 163–88)

[30] Smarzynska Javorcik, B, *'The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies'*. (2004, European Economic Review 48(1): 39–62)

[31] Ibid, at 30

[32] Hassan E, Yaqub O, Diepeeven S, *'Intellectual Property and Developing Countries: A Review of the Literature'* (2010, RAND Corporation)

in nature and hence differ across national boundaries. In this regard, stronger IPRs in some developing states can be a location advantage that will positively affect multinationals' decisions to set in that state.[33] On the contrary, developing states characterised by weak IPRs can be less attractive locations for foreign firms. However, in the context of TRIPS, it is reasonable to think that the trend toward harmonisation of IPRs within TRIPS would offset such location advantages. In sum, states with weak IPR protection may become more attractive for potential investors as they strengthen their IPR regime.[34]

[19] Conversely, strong IPRs may negatively influence FDI by providing rights holders with increased market power. As a result, strong IPRs, at least theoretically, may cause firms to divest and reduce their service to foreign states.[35] The market power effect can reduce the elasticity of demand facing the foreign firm, inducing them to invest or produce less of its patentable product in the host state, or products made by a patentable process in the market with the stronger IPRs. Moreover, stronger IPRs can allow the practice of higher prices by foreign firms because IPRs reduce competition among firms. Therefore, stronger prices can compensate for lower investment or production. Not only can strong IPRs increase the market power of foreign firms, but they also can cause multinationals to switch their preferred mode of delivery from foreign production and R&D to licensing.[36] Firms may prefer FDI over licensing when protection is weak, as firms are more able to maintain direct control over their proprietary assets through internalised foreign production or in- house foreign R&D.[37] In this case, strengthening IPRs diminishes the incentive for FDI at the margin for R&D-intensive industries.[38] Based on data obtained from almost 100 US firms regarding their perceptions of the strength of such protection in the various states, the level of

[33] Ibid, at 32
[34] Maskus, K.E., K. Saggi and T. Puttitanun, *'Patent Rights and International Technology Transfer through Direct Investment and Licensing'*. (2004) Paper prepared for the International Public Goods and the Transfer of Technology after TRIPS Conference, Duke University Law School, Durham, NC, 4–6 April.
[35] Maskus, K.E. and M. Penubarti, *'How Trade-related Are Intellectual Property Rights?*' (1995, Journal of International Economics 39(3–4): 227–48)
[36] Primo Braga, C.A. and C. Fink *'Relationship between Intellectual Property Rights and Foreign Direct Investment'*. (1998, Duke Journal of Comparative & International Law 163(9): 163–88)
[37] Ferrantino, M.J, *'The Effect of Intellectual Property Rights on International Trade and Investment'* (1993, Weltwirtschaftliches Archiv 129: 300–31)
[38] Primo Braga, C.A. and C. Fink, *'Economic Justification for the Grant of Intellectual Property Rights: Patterns of Convergence and Conflict'* (1997, Chicago–Kent Law Review 439(72): 439–62)

intellectual property protection influenced the volume of US FDI.[39] According to the index of patent strength developed by Maskus and Penubarti, the strength of IPRs positively affected FDI decisions for more developed states. When other things were equal, a 1 per cent rise in the extent of patent protection expanded the stock of US investment in developing states by 0.45 per cent.[40]

[20] The effects of IPRs on FDI tend to vary by a state's level of economic development.[41] For example, developing states which are WTO members generally have greater inward stocks of FDI than developing states which are not.[42] However, least developed WTO members do not have significantly more FDI than non-members. Nevertheless, overall an increase in the strength of IPRs will tend to have a significant positive effect on the inward and outward FDI of both developing and least developed states.

[21] In a study comprising a survey on US manufacturing firms, the importance of IPRs for investment depended on the purpose of the investment project.[43] For example, only a minor share of the respondents of the study was concerned about IPRs for investment in sales and distribution. The share of those concerned rose when looking at investment in rudimentary production and assembly facilities. The share further increased for investment in manufacturing components, complete products and R&D facilities.[44] Thus, IPRs should have variable degrees of importance in different sectors in terms of encouraging FDI. Investment in lower-technology goods and services, such as textiles and apparel, electronic assembly, distribution, and hotels, depends far less on the strength of IPRs than on input costs and market opportunities.[45] Firms investing in a product or technology that is costly to imitate may also place little emphasis on local IPRs in location decisions, though falling

[39] Ibid, at 36
[40] Ibid, at 38
[41] Park, W.G. and D. Lippoldt, *'The Impact of Trade-Related Intellectual Property Rights on Trade and Foreign Direct Investment in Developing Countries*' (2003, Paris: OECD)
[42] Ibid, at 41
[43] Mansfield, E, *'Intellectual Property Protection, Foreign Direct Investment and Technology Transfer'*. (1994, International Finance Corporation Discussion Papers 27)
[44] Hassan E, Yaqub O, Diepeeven S, *'Intellectual Property and Developing Countries: A Review of the Literature'* (2010, RAND Corporation)
[45] Maskus, K, *'Intellectual Property Rights and Foreign Direct Investment'*. (2000, Centre for International Economic Studies, Policy Discussion Paper, No. 0022)

imitation costs in many sectors raise the importance of IPRs.[46] Firms with easily copyable products and technologies, such as pharmaceuticals, chemicals, food additives, and software, are more concerned with the ability of the local IPRs system to deter imitation. Firms considering where to invest in a local R&D facility would pay particular attention to protection for patents and trade secrets.[47]

[22] Stronger IPRs positively affect the volume of inward FDI in developing states, especially those with strong technical absorptive capabilities.[48] Additionally, they may influence the composition of FDI by encouraging investment in production and R&D rather than in sales and distribution. Moreover, developing states may benefit from the international harmonisation of IPR regimes. Strong IPRs increase inward FDI and contribute further to industrial development. The Caribbean region has entered into Regional Trade Agreements, Free Trade Agreements and Bilateral Investment Treaties all of which contain provisions on the protection of IPRs, highlighting the importance of IP for trade amongst states. Firstly, The Revised Treaty of Chaguaramas includes a provision on IP, Article 66.[49] The aim of this article is to promote the protection of IPRs within the Caribbean region, by strengthening the regimes for protection of IPRs and simplifying the registration procedures in Member States. This has also been included in Article 139[50] of the

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[46] Ibid, at 45

[47] Maskus, K, *'Intellectual Property Rights and Foreign Direct Investment'*. (2000, Centre for International Economic Studies, Policy Discussion Paper, No. 0022)

[48] Hassan E, Yaqub O, Diepeeven S, *'Intellectual Property and Developing Countries: A Review of the Literature'* (2010, RAND Corporation)

[49] Article 66 of the Revised Treaty of Chaguaramas:

"COTED shall promote the protection of intellectual property rights within the Community by, inter alia:

(a) the strengthening of regimes for the protection of intellectual property rights and the simplification of registration procedures in the Member States;

(b) the establishment of a regional administration for intellectual property rights except copyright;

(c) the identification and establishment, by the Member States of mechanisms to ensure:

(i) the use of protected works for the enhanced benefit of the Member States;

(ii) the preservation of indigenous Caribbean culture; and

(iii) the legal protection of the expressions of folklore, other traditional knowledge and national heritage, particularly of indigenous populations in the Community;

(d) increased dissemination and use of patent documentation as a source of technological information;

(e) public education;

(f) measures to prevent the abuse of intellectual property rights by rights- holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology; and

(g) participation by the Member States in international regimes for the protection of intellectual property rights."

[50] Article 139 of the CARIFORUM – EU Economic Partnership Agreement:

Nature and scope of obligations

1. The EC Party and the Signatory CARIFORUM States shall ensure an adequate and effective implementation of the international treaties dealing with intellectual property to which they are parties and of the Agreement on Trade-related Aspects of Intellectual Property, contained in Annex IC to the Agreement establishing the World Trade Organisation (hereinafter referred to as the TRIPS Agreement).

CARIFORUM-EU EPA. The CARIFORUM-EU EPA is an FTA signed in 2008 by the CARIFORUM States within the Caribbean region, including Barbados. This has been signed with the European Community and its Member States, to promote economic development of the CARIFORUM States. Article 139 of this Agreement implements the nature and scope of obligations for IP protection. Paragraph 1[51] ensures that the EC party and CARICOM States shall ensure adequate and effective implementation of international treaties dealing with IPRs to which they are parties.

[23] Lastly, an example of a typical Bilateral Investment Treaty (BIT) will be used to show the importance of IP in our BIT agreements as well. Using the BIT[52] Agreed between the Government of Canada and the Government of Barbados, it is important to look at the definition of investment.[53] IP has been included in the definition of investment. This inclusion may indicate the importance of IPRs for FDI, as it is a recognized form of investment for a state.

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2. The EC Party and the Signatory CARIFORUM States agree that the principles set out in Article 8 of the TRIPS Agreement apply to this Section. The Parties also agree that an adequate and effective enforcement of intellectual property rights should take account of the development needs of the CARIFORUM States, provide a balance of rights and obligations between right holders and users and allow the EC Party and the Signatory CARIFORUM States to protect public health and nutrition. Nothing in this Agreement shall be construed as to impair the capacity of the Parties and the Signatory CARIFORUM States to promote access to medicines.

3. For the purpose of this Agreement, intellectual property rights include copyright (including the copyright in computer programmes, and neighbouring rights); utility models; patents including patents for bio-technological inventions; protection for plant varieties; designs; layout-designs (topographies) of integrated circuits; geographical indications; trade marks for goods or services; protection for data bases; protection against unfair competition as referred to in Article 10bis of the Paris Convention for the Protection of Industrial Property, and protection of undisclosed confidential information on know-how.

4. In addition and without prejudice to their existing and future international obligations, the EC Party and the Signatory CARIFORUM States shall give effect to the provisions of this Section and ensure their adequate and effective implementation no later than 1 January 2014 unless the CARIFORUM-EC Trade and Development Committee determines otherwise taking into account the development priorities and levels of development of the Signatory CARIFORUM States. The EC Party and the Signatory CARIFORUM States shall be free to determine the appropriate method of implementing the provisions of this Section within their own legal system and practice.

5. The EC Party and the Signatory CARIFORUM States may, but shall not be obliged to, implement in their law more extensive protection than is required by this Section, provided that such protection does not contravene the provisions of this Section.

[51] Paragraph 1 of the CARIFORUM – EU Economic Partnership Agreement:

"The EC Party and the Signatory CARIFORUM States shall ensure an adequate and effective implementation of the international treaties dealing with intellectual property to which they are parties and of the Agreement on Trade-related Aspects of Intellectual Property, contained in Annex IC to the Agreement establishing the World Trade Organisation (hereinafter referred to as the TRIPS Agreement)."

[52] Agreement on the Reciprocal Protection of Investment Between Canada and Barbados concluded 29th May 1996

[53] Article 1 (f) of the Agreement on the Reciprocal Protection of Investment Between Canada and Barbados:

"investment" means any kind of asset owned or controlled either directly, or indirectly through an investor of a third State, by an investor of one Contracting Party in the territory of the other Contracting Party in accordance with the latter's laws and, in particular, though not exclusively, includes:

v. intellectual property rights

1.5 SUMMARY

- There appears to be a strong link between IPRs, trade and economic development
- Within the Caribbean, statistics have shown that IPRs may be beneficial to the region as an IPR-intensive industry generates a high volume of economic revenue
- To maximize on economic growth, Barbados should align their laws with the governing IPR norms and standards and ensure there is enforcement of these laws
- The effect of IPRs on FDI depends on the economic development of the state. As discussed above, IPRs generate economic revenue thus boosting the economic development of the state which in turn increases the inflow of investment
- Investment is also more likely in states which have strong IPR protection as investors are comforted that their investments are protected where there is an effective regime to deter imitation
- The success of Barbados' budding medicinal cannabis industry depends on many factors, including the presence of these IPRs. As cannabis may be an IPR-intensive industry, there is the potential for economic revenue, trade and investment inflows to increase as this industry grows

CHAPTER 2: THE MEDICINAL CANNABIS INDUSTRIES THROUGHOUT THE CARIBBEAN REGION

- ***Section 2.1*** *introduces the medicinal cannabis industries within the Caribbean, specifically within Jamaica, Antigua and Barbuda and Barbados.*
- ***Section 2.2*** *provides a comparative analysis of the medicinal cannabis legislation across the three jurisdictions.*

2.1 THE MEDICINAL CANNABIS INDUSTRIES WITHIN THE CARIBBEAN

[24] Jamaica, Antigua and Barbuda and Barbados were selected as the three comparators for the medicinal cannabis industries throughout the Caribbean. All three of these jurisdictions have implemented medicinal cannabis legislation. Under the definitions of medicinal cannabis, Antigua and Barbuda have what can be termed the goal standard. Antigua and Barbuda have the broadest definition of medicinal cannabis that includes what does not constitute medicinal cannabis. All three states have similar eligibility requirements. Similarly, the categories of licenses are mostly the same though Barbados does have a unique category, that being import and export licenses. Looking at the functions of the medicinal cannabis licensing authorities established in each State, Jamaica is unique in including the handling of licenses for both hemp and cannabis. Another similarity is all three states allow medicinal cannabis and cannabis for religious purposes. Additionally, across all three states the recreational use of cannabis is illegal.

[25] In assessing the three Caribbean states of Jamaica, Antigua and Barbuda, and Barbados, this chapter focuses on examining the medicinal cannabis industries in each state and analysing the medicinal cannabis legislation implemented by each state to give a detailed comparison.

[26] Jamaica, Antigua and Barbuda and Barbados were selected as comparators for the following reasons:

- Antigua and Barbuda and Barbados both have relatively nascent medicinal cannabis industries.
- Antigua and Barbuda and Barbados are similar in size as indicated in the table below. This similarity in size may be directly related to the sheer size of the industry within these Countries, thereby assuming similarity in size may indicate a similar medicinal cannabis industry
- Jamaica is often described as the forerunner within CARICOM in the medicinal cannabis field.[54] Jamaica was thus used as a comparator not because of its size but rather its model medicinal cannabis legislation.

Table 1: Summary facts - Jamaica, Antigua and Barbuda and Barbados

	SIZE	GROSS DOMESTIC PRODUCT	TOPOGRAPHY
JAMAICA	4, 244 mi^2	USD 16.46 billion (2019)	• Elevation - 1500 ft • Mountainous interior • Many interior valleys
ANTIGUA AND BARBUDA	169.9 mi^2	USD $1.662 billion (2019)	• Low-lying islands • Central area - fertile plain
BARBADOS	166.4 mi^2	USD $5.209 billion (2019)	• Gently sloping lowlands • Terraced plains • Varying soil fertility

[54] Martina Regis, Livia Bertin- Mark, Jamila Alleyne, 'The Medicinal Cannabis Revolution- Challenges in Banking a Budding Industry in the EECU' (2020) Eastern Caribbean Central Bank 2

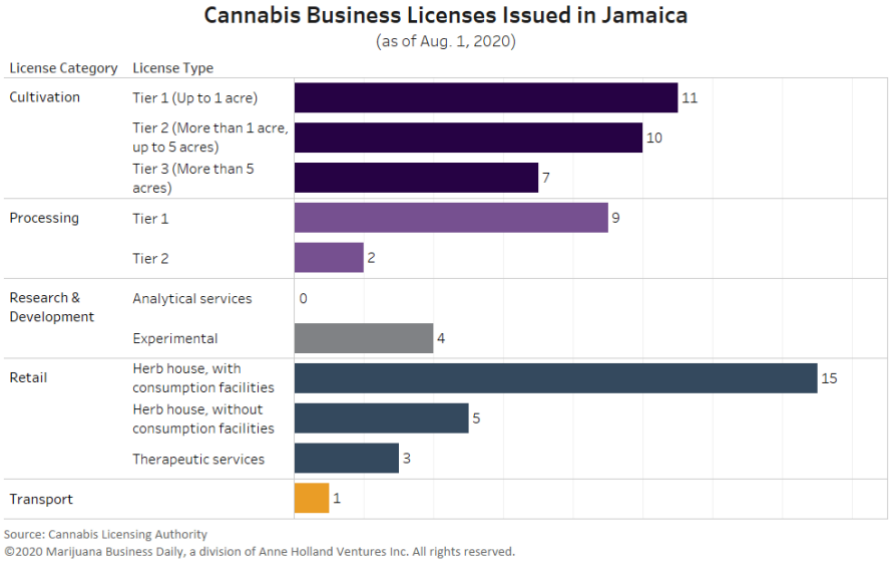
2.1.1 JAMAICA

[27] The medicinal cannabis Industry in Jamaica was introduced by recent amendments to the Dangerous Drugs (Amendment) Act 2015 (DDA).[55] The amended DDA created the Cannabis Licensing Authority (CLA) which is the body tasked with enabling a lawful, regulated industry in cannabis for medicinal, therapeutic, or scientific purposes.[56] In 2018, Jamaica further established the Dangerous Drugs (Cannabis Licensing Appeal Tribunal) Regulations which inter alia, established an appeal tribunal known as the Cannabis Licensing Appeal Tribunal that permits appeals of any decision of the Authority to refuse, suspend or revoke a license or permit.

[28] The CLA has also been working on the Dangerous Drugs (Cannabis Import and Exporting Licensing) Regulations 2020. It appears that Jamaica has developed comprehensive legislation to lay the groundwork for the development of a medicinal cannabis industry. The CLA has stated that the trade between licensees has been valued at US $1.34 million during the period of May 2019 to July 2020.[57] As of August 2020, the CLA has granted 67 licenses and has also issued 315 conditionally approved licenses, from the 712 applications received since the Authority's establishment in 2015.[58] Figure 1, below shows the number of certain types of licenses issued in Jamaica, indicating the development of a broad medicinal cannabis industry.

[55] The Dangerous Drugs (Amendment) Act, 2015
[56] 'Leader of Opposition of Jamaica, Mark Golding has plans to take the law relating to medicinal cannabis out of the DDA, and enact a Cannabis Industry Development Act, should his party become Government.':
JO, 'Golding pledges to overhaul ganja industry' (Jamaica Observer, 16 March 2021) < https://www.jamaicaobserver.com/latestnews/Golding_pledges_to_overhaul_ganja_industry?profile=1228#disqus_thread> accessed 8 June 2021
[57] CNW, 'Jamaica Reports Increase in Trading Among Marijuana Licensees' (Caribbean National Weekly, 28 August 2020) < https://www.caribbeannationalweekly.com/caribbean-breaking-news-featured/jamaica-reports-increase-in-trading-among-marijuana-licensees/> accessed 5 March 2021
[58] Ibid, at 57

Figure 1: Medicinal Cannabis Licenses Issued in Jamaica[59]



[29] Jamaica has also taken significant steps to include local cannabis farms through the Alternative Development Programme, led by the Ministry of Industry, Commerce, Agriculture and Fisheries and supported by the CLA. This Programme seeks to transition cannabis farmers from the illicit trade to the legal industry for scientific and medicinal purposes.[60] The Jamaica Medicinal Cannabis Corporation is a private entity headquartered in Toronto, Canada which has made significant strides in expanding the medicinal cannabis industry within Jamaica. The JMCC Group is the leading global provider of premium Jamaican medicinal cannabis products and aims to achieve a self-sufficient supply chain relying on their source of medicinal cannabis from local Jamaican cannabis farmers.[61]

[59] Matt Lamers, 'Jamaica reports $1.3 million in B2B cannabis trade as license issuances rise' (Marijuana Business Daily, 24 August 2020) <https://mjbizdaily.com/jamaica-reports-1-3-million-in-b2b-cannabis-trade-as-license-issuances-rise/> accessed 5 March 2021

[60] Cannabis Licensing Authority Jamaica, 'Alternative Development Project; Including the Small Traditional Ganja Farmers in the Regulated Space' (Cannabis Licensing Authority, December 2017) <https://www.cla.org.jm/sites/default/files/documents/The%20Alternative%20development%20Programme_as%20at%20December%202017.pdf> accessed 5 March 2021

[61] JMCC, 'Where Nature Meets Science' (Jamaican Medicinal Cannabis Corporation, 2018) <https://www.jamaicanmedicann.com/where-nature-meets-science> accessed 5 March 2021

2.1.2 ANTIGUA AND BARBUDA

[30] The medicinal cannabis industry in Antigua and Barbuda is in its adolescent stage of development. The use of cannabis was entirely illegal in Antigua and Barbuda up until 2018 when the Misuse of Drugs (Amendment) Act 2018[62] was passed, implementing personal use laws that allow individuals to have up to 15 grams of cannabis. Following this amendment was the passing of the Cannabis Act (2018)[63] of Antigua and Barbuda which decriminalized the use of cannabis for religious and medicinal use. This Act establishes the Antigua and Barbuda Medicinal Cannabis Authority which oversees the enforcement of the provisions of the Act. Subsequently, the Hemp Bill 2020, which legalized the cultivation, production, and supply of hemp and hemp-related products for medicinal, industrial, scientific, and supplemental purposes was also enacted.

[31] Antigua and Barbuda, like the rest of the Caribbean, thrives on tourism. The Cannabis Act 2018 opened the door for medicinal cannabis tourism in Antigua and Barbuda, and foreign investment in this new industry. Foreign investors are not limited in how much they can own or control when investing and are allowed to hold the entirety of their investment. The medicinal cannabis industry has attracted celebrity foreign investors.[64] Companies have also set their sights on Antigua and Barbuda based on the new cannabis laws. Eco Equity, a British-based company, has aspirations of becoming the premier producer and distributor of medicinal cannabis products globally and hopes to enter the Antigua and Barbudan market. Eco Equity aims to be the first and top brand for medicinal cannabis in Antigua and Barbuda.[65] However, as this industry is in its nascent stage of development, there is no statistical data to show the current growth of

[62] The Misuse of Drugs (Amendment) Act, 2018 (No. 3 of 2018)
[63] The Cannabis Act, 2018 (No. 28 of 2018)
[64] For example, the industry attracted Mike Tyson in 2020: Sarah Friedman, 'Mike Tyson to open Tyson's Ranch under Antigua's New Cannabis Regulation' (CBD Testers, August 2020) < https://cbdtesters.co/2020/06/08/mike-tyson-to-open-tysons-ranch-under-antiguas-new-cannabis-regulation/> accessed February 24 2021
[65] Eco Equity, 'UK-based Eco Equity Approved for Medicinal Cannabis Licence in Antigua and Barbuda' (Cision PR Newswire, 20 November 2019) < https://www.prnewswire.co.uk/news-releases/uk-based-eco-equity-approved-for-medicinal-cannabis-licence-in-antigua-and-barbuda-839711288.html> accessed February 24 2021

the industry in Antigua and Barbuda. Relocate Antigua has noted though, that the medicinal cannabis industry has the potential to generate tax income estimated at billions across the Caribbean.[66]

2.1.3 BARBADOS

[32] The Medicinal Cannabis Industry Act[67], enacted in 2019, provides for the regulation and handling of medicinal cannabis in Barbados. This Act established the Barbados Medicinal Licensing Authority, a Barbados Medicinal Cannabis Licensing Board and a Barbados Medicinal Cannabis Appeals Tribunal. It also addresses the issuing of licenses for the handling of medicinal cannabis. The introduction of this Act forms the legal foundation for a medicinal cannabis industry in Barbados. An applicant under this Act can apply for more than one license. These licenses may be acquired together depending on their nature.

[33] However, this industry, much like Antigua and Barbuda's industry is still in its first stages of development, with the official launch of the cannabis sector having taken place in January 2021, when applications for medicinal cannabis licenses were officially opened. This industry is developing at a time where Barbados' economy is undergoing a major crisis, particularly after the COVID-19-pandemic. Thus, the success of the cannabis industry, that potentially could generate substantial revenue, could be a part of the solution to the high national debt.[68] Barbados' location between the US/ Canada and Europe may help to drive exports, allowing the economy to reach pre-COVID-19 level.[69]

[66] Relocate Antigua, 'Medical Marijuana in the Caribbean' (Relocate Antigua, 24 November 2020) < https://relocateantigua.com/medicinal-marijuana-in-the-caribbean/> accessed 23 February 2021
[67] The Medicinal Cannabis Industry Act, 2019
[68] 'Barbados' gross public sector dept in 2020 was 144% of GDP.'
Central Bank of Barbados, 'Central Bank of Barbados Annual Report 2020: Rising Together" < http://www.centralbank.org.bb/Portals/0/Files/Central%20Bank%20of%20Barbados%202020%20Annual%20Report.pdf> accessed 7 June 2020
[69] Roland Sebestyen, 'Bermuda and Barbados Turn to Cannabis to Boost Their Economies' (Canex, 19 February 2021) < https://canex.co.uk/bermuda-and-barbados-turn-to-cannabis-to-boost-their-economies/> accessed February 26 2021

2.2 THE COMPARATIVE ANALYSIS OF THE MEDICINAL CANNABIS LEGISLATION

[34] The medicinal cannabis legislation across Jamaica, Antigua and Barbuda and Barbados will be critically analysed and compared. Table 2 identifies the legislation implemented in each state.

Table 2: The Medicinal Cannabis Legislation in Jamaica, Antigua & Barbuda and Barbados

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
LEGISLATION	Dangerous Drugs (Amendment) Act 2015	The Cannabis Act 2018	The Medicinal Cannabis Industry Act 2019

2.2.1 WHAT IS MEDICINAL CANNABIS?

[35] The definition of medicinal cannabis forms the foundation upon which the cannabis industry stands. Essentially, what constitutes medicinal cannabis shapes the understanding of those participating in the industry and dictates their decision-making, from members of the various Authorities to potential investors and licensees. Ideally, a comprehensive, encompassing definition of medicinal cannabis is the goal, as it would allow for a wider range of trade and investment, as participants have larger boundaries to work within. For example, investors would have the choice to direct their interest to the seed, or they can

focus on a derivative of cannabis or cannabis concentrate. Table 3 below lays out the definitions of medicinal cannabis present within each Act.

Table 3: Definitions of Medicinal Cannabis within the Legislation

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
DEFINITION OF MEDICINAL CANNABIS	• Includes cannabis that is recommended or prescribed by a registered medicinal doctor and approved by the Minister of Health • Hemp is also defined in this Act as a cannabis plant having a THC concentration of no more than 1.0% • Hemp is excluded from the provisions in the DDA that apply to cannabis • However, the cultivation, processing, sale, import, export and other handling of hemp	• "Medicinal Cannabis" means cannabis that is grown and sold pursuant to the Cannabis Act. • This includes all parts of the plant of the genus cannabis whether growing or not • Also includes the seeds thereof, the resin extracted from any part of the plant, and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or its resin, including cannabis concentrate that is cultivated, manufactured,	"Medicinal Cannabis" means: • cannabis • seeds, immature plants as well as all parts of the plant, along with resin extracted • every compound, manufacture, salt, derivative, mixture or preparation from cannabis; or • cannabis concentrate that is cultivated, processed, manufactured, distributed or sold under a license

	will be regulated by a licensing regime administered by the Cannabis Licensing Authority	distributed, or sold by a licensed Medicinal Cannabis Establishment • Does not include industrial Hemp, nor does it include fibre produced from stalks, oil or cake made from the seeds of the plant	

[36] The definitions of medicinal cannabis provided for under Antigua and Barbuda's and Barbados' legislation are almost identical and are detailed as the genetic composition of the plant, any subsequent preparations or derivatives and the process are all included. Antigua and Barbuda's Act may be distinguished as it provides a negative definition of medicinal cannabis in what it does not include, and notably industrial Hemp does not fall within this definition. Jamaica's DDA fails to provide an explicit definition of medicinal cannabis but from the provisions of the Act it may be implied that this type of cannabis is that which is prescribed by a medicinal practitioner. Additionally, Hemp is defined by Jamaica's DDA, but does not fall under the provisions in the Act that apply to cannabis.

2.2.2 ELIGIBILITY OF LICENSES

[37] A license must first be issued, to partake in the medicinal cannabis industry. Table 4 below provides the eligibility requirements to obtain licenses in Jamaica, Antigua and Barbuda and Barbados.

Table 4: Eligibility Requirements to obtain licenses in Jamaica, Antigua and Barbuda and Barbados

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
ELIGIBILITY REQUIREMENTS	**Found in the Regulations promulgated by the Cannabis Licensing Authority:** • Individual (for cultivation) must be living in Jamaica 3 or more years • Company must be registered with the Companies Office of Jamaica • Cooperatives must have proof of registration Persons that cannot apply: • Persons convicted of offences in: Schedule	**Found in the Regulations promulgated by the Cannabis Licensing Authority**: • Applicants must be over 18 years of age • Companies must be registered in the jurisdiction • There is no restriction on nationality	**S32 (1) The Medicinal Cannabis Industry Act:** • 18 years of age or older • Citizen of Barbados • Permanent resident of Barbados • Immigrant Status in Barbados • Citizen of a CARICOM Member State • A company, partnership or co-operative society may apply for a license • Person convicted of offences in the Second

	3 Criminal Records Act 2014 • Or Sections 92 and 93 of the Proceeds of Crime Act • Persons convicted of offences not including above for which 5 or 10 years has not passed since the completion on the sentence • Any person convicted of a similar offence overseas		Schedule of the Medicinal Cannabis Industry Act not eligible for license

[38] Jamaica has extensively considered whether the person applying for licenses has been convicted of previous offences. This is also considered in Barbados' Act. Moreover, Barbados introduces an age of 18 years or older to apply for a license which Jamaica does not have. Similarly, both Acts do state that a company may apply for a license and an individual should have immigrant status within their respective jurisdictions in order to apply.

2.2.3 CATEGORIES OF LICENSES

[39] Each Act as set out in Table 5 below, provides for the extensive range of licenses available, ranging from cultivation to therapeutic licenses. These categories cover the detailed process of medicinal cannabis, from planting to exporting to another territory.

Table 5: Category of licenses in the medicinal cannabis legislations of Jamaica, Antigua and Barbuda and Barbados

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
CATEGORY OF LICENSES	S 30: • Cultivation of cannabis for medicinal purposes • Transporting of medicinal cannabis • Manufacturing of medicinal cannabis products • Dispensing of medicinal cannabis • Retail license	S 57: • Cultivation license • Dispensary license • Special Dispensing license • Lounge license • Testing Facility license • Processing and Extraction license	S 30: • Cultivator's license • Processing license • Transport license • Retail license • Research and Development license • Laboratory testing of medicinal cannabis license

	• Research and development of cannabis for medicinal therapeutic or scientific purposes	• Medicinal Cannabis Infused Products Manufacturer license • Transport license • Research license • Medicinal Cannabis import or export license	• Importing of medicinal cannabis • Exporting of medicinal cannabis

[40] There is a wide range of licenses available to those who seek to participate in the medicinal cannabis industry. Throughout each jurisdiction, there is a similar cultivation license as well as research and transport. Jamaica, Antigua and Barbuda and Barbados have a great variety of categories of licenses.

2.2.4 FUNCTIONS OF MEDICINAL CANNABIS LICENSING AUTHORITIES

[41] All three jurisdictions as set out in Table 6, have established a medicinal cannabis licensing authority under their relevant Acts. The functions are quite similar for all three of these bodies and include broadly: enforcing and developing policies, regulating the handling of medicinal cannabis licenses and developing enforcement procedures.

Table 6: Functions of Medicinal Cannabis Licensing Authorities

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
AUTHORITIES	S 9A (2) (a): The power to make, with the approval of the Minister: • regulations for the issue and regulation of license, permits and authorizations for the handling of hemp and cannabis for medicinal purposes • A duty to ensure that the aforementioned regulations do not contravene Jamaica's international obligations • Such other powers, functions and duties	S 14: • Monitor and conduct all administrative operations relating to medicinal cannabis and cannabis for religious use • Enforce, maintain and modify policies, procedures, and guidelines relating to medicinal cannabis and cannabis for religious use • Enforce policy for the licensing and regulating the cultivation, processing, production of infused products, testing facilities, research, dispensing, sale, import, export and	S 4 (1): • Develop policies, procedures and guidelines to establish the medicinal cannabis industry and to ensure medicinal cannabis is available to patients • Regulate the handling of medicinal cannabis • Issue license in relation to the handling of medicinal cannabis in accordance with the provisions of this Act • Develop enforcement procedures in relation to the inspection of premises

	as may be assigned to the Authority under this Act or any other Law	use of medicinal cannabis • Create and provide for the distribution of educational materials and conduct training programmes and certification courses in relation to the development of medicinal cannabis • Track and monitor all aspects of the medicinal cannabis industry in accordance with international guidelines	• Assist with the provision of analytical services • Maintain an electronic database • Establish and maintain an electronic register of medicinal practitioners • Provide for the distribution of educational materials and conduct of training programmes • Ensure proper disposal requirements

[42] There is one notable difference among the three jurisdictions. Jamaica's legislation allows for the handling of licenses for hemp and cannabis but Antigua and Barbuda and Barbados' legislation do not. Remarkably, all three jurisdictions provide for the use of cannabis for a religious purpose.

2.2.5 STATUS OF RECREATIONAL CANNABIS USE

[43] In all three jurisdictions cannabis is still illegal to use recreationally though each jurisdiction has made a slight amendment to this illegality as shown below in Table 7. Within Jamaica, possession of up to two ounces of cannabis is no longer a criminal offence. This is similar to Antigua & Barbuda, where possessing 15 grams or less has no penalty. Barbados has also recently made an amendment which provides for a fixed penalty if possession is no more than 14 grams. Despite these amendments, overall, recreational use and trafficking of cannabis maintains a status of illegality throughout all three countries.

Table 7: Status of legality/illegality of recreational cannabis use

	JAMAICA	ANTIGUA AND BARABUDA	BARBADOS
STATUS	• Illegal • However, possession of up to two ounces is no longer a criminal offence	• Illegal • However, the amendment of the Misuse of Drug Act provides no penalty for possessing 15 grams or less, but its public use is still restricted	• Illegal • However, the amendment of the Drug Abuse (Prevention and Control) Act provides for the payment of a fixed penalty for possession of no more than 14 grams

[44] A major issue that requires attention is the illegality of medicinal cannabis in the other statutes in Barbados. For example, the Proceeds and Instrumentalities of Crime Act 2019[70] seeks to deprive persons of the proceeds of and benefits derived from criminal conduct.

[70] Proceeds and Instrumentalities of Crime Act 2019-17

Criminal conduct is defined under this Act to include conduct that would constitute an offence in Barbados.[71] This conduct can be in relation to drug trafficking and money laundering offences as outlined under Section 16 of the Act. Particularly, an offence under section 18[72] of the Drug Abuse (Prevention and Control) Act refers to importing, exporting, supplying or possessing a "controlled drug." A controlled drug is defined under the First Schedule of the Drug Abuse (Prevention and Control) Act and includes cannabis.[73]

[45] The classification of cannabis as a controlled drug means that it falls within "criminal conduct" as understood under the Proceeds and Instrumentalities of Crime Act, an act whose sole purpose is to prohibit persons from obtaining any profit from this type of conduct. Therefore, there is an obvious conflict between the Proceeds and Instrumentalities of Crime Act and the Medicinal Cannabis Industry Act. In the Medicinal Cannabis Industry Act medicinal cannabis is legalized, but in the Proceeds and Instrumentalities of Crime Act, cannabis in all forms is still treated as a crime. This legal framework poses a significant threat to the medicinal cannabis industry, as any profits generated by investors in the medicinal cannabis industry will be treated as proceeds of crime. The law of Barbados is instrumental in encouraging investment and the law as it stands may harm the medicinal cannabis industry, potentially deterring investment and trade.

[46] The classification of cannabis as a controlled drug ought to be removed and Barbados should consider modelling its legislation after the United Nations (UN). In 2020, The UN Commission on Narcotic Drugs approved a recommendation from the World Health Organization to remove cannabis and cannabis resin from its Schedule IV classification

[71] Section 2 of the Proceeds and Instrumentalities of Crime Act 2019-17

[72] Section 18 (1) of the Drug Abuse (Prevention and Control Act)
'For the purposes of this Act, the expression "traffic","trafficking" or "drug trafficking" in relation to a controlled drug. means doing or being concerned, whether in Barbados or elsewhere, in any of the following:
(a) importing or exporting a trafficable quantity of any controlled drug where importation or exportation contravenes section 4(1) or a corresponding law;
(b) supplying a trafficable quantity of any controlled drug where supply contravenes section 5(1) or a corresponding law;
(c) possessing a trafficable quantity of any controlled drug where possession of the drug contravenes section 6(1) or a corresponding law; and includes a person doing the following whether in Barbados or elsewhere…'

[73] Part 1 (List of Narcotic Drugs) of the First Schedule of the Drug Abuse (Prevention and Control) Act

under the 1961 Single Convention on Narcotic Drugs. This move recognized the medicinal value of cannabis.[74]

Moreover, as mentioned above, the offence of drug trafficking criminalizes the exportation of controlled drugs out of the country. As cannabis is still a controlled drug, this is another major discrepancy between the Proceeds and Instrumentalities of Crime Act and the Medicinal Cannabis Act, where export licenses for medicinal cannabis are provided for under the Medicinal Cannabis Industry Act. The criminalization of exporting cannabis would deter investors interested in Barbados' cannabis industry if they are prohibited from exporting their products out of Barbados. Thus, a proposed way forward for Barbados is to amend its relevant Acts to be in alignment with a framework which encourages a successful medicinal cannabis industry. A possible recommendation is removing cannabis from the list of controlled drugs.

2.3 SUMMARY

- The medicinal cannabis industries within Jamaica, Antigua and Barbuda and Barbados are at different stages of development but have the potential to generate significant economic revenue
- The comparative analysis of the medicinal cannabis legislation across these three states showed major similarities and minor differences in areas such as the definition of medicinal cannabis, the types of licenses, eligibility requirements for licenses and function of the medicinal cannabis licensing authority
- There is an obvious discrepancy between the Proceeds of Crime Act and the Medicinal Cannabis Industry Act where proceeds from cannabis would be deprived under the Proceeds of Crime Act although the drug in its medicinal form is legalized under the Medicinal Industry Act

[74] Harmeet Kaur, 'The UN removes cannabis from a list of the most dangerous substances' (CNN, 3 December 2020) < https://edition.cnn.com/2020/12/02/health/un-reclassifies-cannabis-scn-trnd/index.html> accessed 6 April 2021

- The list of controlled drugs under the Drug Abuse (Prevention and Control) Act needs immediate amendment to remove cannabis as a controlled drug. This classification will include proceeds from Cannabis as “criminal conduct”, which may deter investors from the medicinal cannabis industry in Barbados as any profit generated within this industry will be treated as proceeds of crime

CHAPTER 3: ASSESSMENT OF THE DOMESTIC INTELLECTUAL PROPERTY RIGHTS FRAMEWORK IN BARBADOS

- ***Section 3.1*** *examines the domestic intellectual property laws in Barbados which may potentially protect the cannabis plant and extraction processes in the cannabis industry*
- ***Section 3.2*** *examines Plant Patents in Barbados*
- ***Section 3.3*** *examines Plant Breeder's rights in Barbados*
- ***Section 3.4*** *discusses the protection of the extraction process of cannabis in Barbados*
- ***Section 3.5*** *discusses the protection of unique local cultivar phenotypes with Geographical Indicators*

3.1 THE POTENTIAL TO PROTECT THE CANNABIS PLANT IN BARBADOS

[47] There are three main species of the cannabis plant: Sativa, Indica and Ruderalis.[75] Similar to other industries, the medicinal cannabis industry is subject to a value chain. The beginning of this chain is the cannabis plant, from which medicinal properties are extracted. These properties from the plant are processed and sold in different forms, to be used in different applications. DeBeer has noted that IP protection pervades the entirety of this value - chain.[76]

[48] The plant is arguably the most important aspect of the industry, as it is the genesis from which the value chain flows. Investors and stakeholders in the Barbadian medicinal cannabis industry will therefore need assurance that the cannabis plant may be protected through IPRs. Therefore, this chapter will examine Barbados' domestic intellectual property laws surrounding the protection of cannabis strains and assess their effectiveness for the promotion of trade and investment in the Barbadian cannabis industry.

[75] Jeremy De Beer and Alyssa Gaffen, 'Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity', (2017) 50 UBC L Rev 621
[76] Ibid, at 75

3.1.1 INTRODUCTION TO THE INTERNATIONAL OBLIGATIONS THAT HAVE INFLUENCED DOMESTIC LEGISLATION

[49] The domestic IP legislation surrounding the protection of plants that will be discussed below is affected by the obligations arising from the TRIPS Agreement. All WTO agreements apply to WTO members. Therefore, as a WTO member, Barbados must adhere to the TRIPS Agreement. Please note that the TRIPS Agreement will be discussed in more detail in Chapter 4.

[50] Article 27(3)(b) of the TRIPS Agreement[77] outlines the minimum standards that Barbados must adhere to in its domestic legislation, when protecting plant varieties. This Article reinforces that Barbados may provide protection via patents or an effective sui generis system. The TRIPS Agreement does not provide clarification on the term "effective." This may provide an opportunity for member states to formulate a system that can cater to particularities present in their jurisdiction, or model their domestic legislation after UPOV, as UPOV is considered an effective sui generis system.[78] UPOV is an international treaty that provides protection for plant varieties. It will be discussed in detail in Chapter 4.
Moreover, the term "plant variety" is not defined within TRIPS. This allows WTO members to adopt, at their discretion, a definition of this concept. This leads us to discuss the possibility of protecting a cannabis plant via patents in Barbados.

[77] Article 27(3)(b), The Agreement on Trade-Related Aspects of Intellectual Property Rights (1994):
3. Members may also exclude from patentability:
(b) 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. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.
[78] Biswajit Dhar, 'Sui Generis Systems for Plant Variety Protection. Options Under TRIPS' QUNO, Geneva (2002) 7

3.2 PLANT PATENTS IN BARBADOS

[51] A patent is an exclusive property right[79] requiring application and registration. Once granted, this right provides the holder with the ability to prevent others from exploiting the patented invention without consent, as well as the ability to assign or transmit the patent. The subject of the patent must be new, non-obvious, industrially applicable, and not excluded from patentability. If these conditions are satisfied and fees are paid, a patent holder is awarded a monopoly over the invention for 20 years. After this period, the invention falls into the public domain. This monopoly on the invention is reward for the financial and temporal costs associated with research and development when engaging in the patent process. To receive a patent, one must first examine the requirements provided in the Articles of the Patent Act of Barbados, associated with the cannabis strain. This will be outlined in Table 8 below:

Table 8: Patent Requirements (Barbados)

		SUMMARY OF THE ARTICLE	COMMENTS
REQUIREMENT	**PATENTABILITY CRITERIA[80]**	A patent is granted for an invention if it is: • Novel • Involves an inventive step • Industrially applicable	A patent application must cumulatively meet these criteria to be approved and registered.

[79] Section 5 (1) of the Patent Act of Barbados, Cap 314:
"(1) Subject to this Act, a patent granted under this Act for an invention vests in the owner of the patent the exclusive right
(a) to prevent any other person from exploiting the patented invention without the consent of the owner;
(b) to exploit the patented invention;
(c) to assign or transmit the patent; and (d) to conclude licence-contracts."
[80] Section 7 of the Patent Act of Barbados, Cap 314:
"A patent may be granted under this Act for an invention if the criteria. invention is novel, involves an inventive step and is industrially applicable."

	NOVELTY[81]	An invention is novel if it is not anticipated by prior art.	Novelty means that an invention must be new. Newness indicates, it has not been made available to the public or anywhere in the world, prior to the filing date of the application. The meaning of the term "anticipation" was clarified in *Synthon BV v Smithkline Beecham*[82] as: • the disclosure of information, • which would have enabled a person skilled in the art to arrive at the invention Enablement is therefore crucial as disclosure of information alone will not defeat the novelty of an invention
	INVOLVES INVENTIVE STEP[83]	This requires that an invention is not obvious to a person skilled in the art	A person skilled in the art is someone who is equipped with the

[81] Section 8 of the Patent Act of Barbados, Cap 314:
"(1) For the purposes of section 7, an invention is novel if it is not anticipated by prior art.
(2) In relation to an invention, prior art for the purposes of subsection (1) consists of everything disclosed about the invention to the public anywhere in the world
(a) by publication in tangible form or by oral disclosure; or
(b) by any other means prior to the filing date or, as the case may be, the priority date, of the publication claiming the invention.
(3) For the purposes of subsection (2), disclosure to the public of the invention shall not be taken into consideration
(a) if it occurred within 12 months preceding the filing date or, where applicable, the priority date of the application; and
(b) if it was the result of acts by the applicant or acts by his predecessor in title or the result of an abuse by a third party with regard to the applicant or his predecessor in title."
[82] *Synthon BV v Smithkline Beecham plc* [2005] UKHL 59
[83] Section 9 of the Patent Act of Barbados, Cap 314:
"For the purposes of section 7, an invention involves an Inventive step. inventive step when, having regard to the prior art at the time that an application is made for a patent for that invention, the invention is not obvious to a person having ordinary skill in the art."

			common general knowledge of the industry.[84]
	INDUSTRIALLY APPLICABLE[85]	An invention is industrially applicable if made or used in any industry.	The applicant must demonstrate that they can commercialize the invention.
	PATENTABILITY EXCLUSIONS[86]	An invention must not be excluded within section 11 of this Act, to be patentable.	Paragraph E of this Article indicates plant varieties and biological processes for the production of plants are not patentable.

[52] The table above indicated the patent requirements in the Patent Act of Barbados. Plant varieties are not patentable under this Act, as they have been excluded from patentability by Section 11(3). An alternative IPR that may be utilised to extend IP protection to plant varieties is a plant breeders' right, under the Barbados Protection of New Plant Varieties Act.

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[84] David Bainbridge, '*Intellectual Property'*, (7th edition, Pearson Education Ltd, 2009)

[85] Section 10 of the Patent Act of Barbados, Cap 314

"(1) An invention is industrially applicable if it can be made or used in any kind of industry.
(2) For the purposes of this section, "industry" refers to industry of every kind, and includes handicraft, agriculture, fishery and services."

[86] Section 11 of the Patent Act of Barbados, Cap 314:

"(1) Whether or not they constitute an invention within the meaning of this Act, the following are not patentable under this Act, namely:
(a) discoveries, scientific theories and mathematical methods;
(b) schemes, rules or methods for
(i) the carrying on of business;
(ii) the performing of acts of a mental nature only; or
(iii) the playing of games;
(c) methods for treatment of human beings or animals by surgery or therapy;
(d) diagnostic methods practised on human beings or animals;
(e) plant varieties, animal varieties and essentially biological processes for the production of plants other than microbiological processes and the products of those processes; or
(f) an invention, the commercial exploitation of which would be contrary to public order or morality or which is prejudicial to human or animal health or to plant life or to the environment.
(2) Paragraphs (c) and (d) of subsection (1) do not extend to products invented for use in the methods referred to in those paragraphs."

3.3 PLANT BREEDERS' RIGHTS IN BARBADOS

[53] Aside from the exclusion of patentability, demonstrating the inventive step may be difficult, as the existing breeding methods have been around for centuries. In response, a sui generis system was developed for these potential roadblocks.[87] Plant Breeder's Rights, as under the Barbados Protection of New Plant Varieties Act, reward a monopoly to the right-holder, for a specified time. This monopoly is over the sale and use of propagating material of the plant, such as seeds or cuttings. As a result, users of the unique plant variety must pay the right-holder royalties to use them, though there are some exemptions such as farmer seed saving provisions and compulsory licenses. A plant breeder may also assert rights over varieties that are essentially derived from their initial variety. Following the duration of protection, the plant variety may be used freely by the public.

[54] Plant breeders' rights are beneficial as they stimulate innovation in plant breeding. An example of this is illustrated in the UPOV case studies in Chapter 4. This innovation in plant breeding may benefit society as a whole, through the development of medications for disease prevention and treatment. Cannabis is one of the earliest recorded plants noted for its medicinal properties[88]. Innovation in plant breeding for the cannabis plant may lead to the development of medications for disease prevention. The importance of plant breeding for medicinal development is reflect in the flourishing global market for trade in medicinal products, which exceeds USD 100 billion per year[89] given the propensity for plants – and by extension food sources to succumb to disease which can lead to famine and death. The

[87] Robert Tripp, Niels Louwaars and Derek Eaton, 'Plant variety protection in developing countries. A report from the field.' (2007) 32 Food Policy
[88] Dennis McKenna, "How Long Have Humans Used Botanicals", <https://www.takingcharge.csh.umn.edu/how-long-have-humans-used-botanicals> (University of Minnesota) accessed 19th June, 2021; Chris S. Duvall, "Drug Laws, Bioprospecting and the Agricultural Heritage of Cannabis in Africa," Space and Polity (2016) Vol. 20, No. 1, 10-25 <https://doi.org/10.1080/13562576.2016.1138674> accessed 19 June, 2021
[89] Sofowora A, Ogunbodede E, Onayade A, "The role and place of medicinal plants in the strategies for disease prevention", African journal of traditional, complementary, and alternative medicines: AJTCAM, (Vol. 10 No.5, 2013) < https://doi.org/10.4314/ajtcam.v10i5.2> accessed 19 June 2021

benefit for the right-holder is the ability to strengthen IPR protection for a particular strain of cannabis for 20 years.[90]

3.3.1 QUALIFYING FOR A PLANT BREEDER'S RIGHT AND THE SCOPE OF THE RIGHT

[55] ***Caveat to foreign investors on the requirement of residency:***

As indicated in the New Plant Varieties Act of Barbados,[91] individuals residing outside of Barbados will require a Barbadian resident to act as their agent in the application process and in legal proceedings regarding PBRs.

[56] ***Requirements:***

There are five criteria that must be satisfied to grant a PBR:

- New
- Distinct
- Homogenous
- Stable
- Given an appropriate name[92]

[57] In addition, a plant variety must be on the list of genera or species, in the order specified by the Minister, in order to qualify for protection. Under the current legislation, cannabis is not on this list.[93] The following table will outline these criteria:

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[90] Law Times, 'Plant breeders' rights overlooked in cannabis IP strategy' https://www.lawtimesnews.com/practice-areas/intellectual-property/plant-breeders-rights-overlooked-in-cannabis-ip-strategy/263087> accessed 4 April 2021

[91] Section 4 (1) of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) Every person whose ordinary residence or principal place of business is outside Barbados shall be represented by an agent who is resident in, and has an office in, Barbados."

[92] Section 5 (1) of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) Subject to this Act, a right to be known as a plant breeder's right shall be granted in respect of plant varieties of those genera or species, which the Minister may by order specify, where the variety is
(a) new;
(b) distinct;
(c) homogenous;
(d) stable; and
(e) given a variety denomination which is acceptable for registration in accordance with section 27."

[93] Barbados Protection of New Plant Varieties Order, 2001

Table 9: Criteria for Plant Breeders' Rights

		SUMMARY OF THE ARTICLE	COMMENTS
REQUIREMENT	**NOVELTY**[94]	A variety will be considered new in Barbados, and therefore novel, if the propagating or harvested material has not been sold in Barbados for more than one year before the application or sold outside of Barbados for more than 6 years for trees or vines, or longer than 4 years for other plants. .	This requirement of novelty is different from that required by the Patent Law. Here, novelty is not harmed by the presence of public knowledge surrounding the strain. Once the time requirements have been adhered to, then the knowledge and sale of the variety will not harm an application.
	DISTINCTNESS[95]	The variety must be clearly distinguishable from any other known variety.	

[94] Section 6 of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) Subject to subsection (2), a variety shall be considered new if the propagating or harvested material of the variety has not been sold or otherwise disposed of to others with the authorisation of the plant breeder or his successor in title
(a) in Barbados for more than one year before the date on which protection is applied for under this Act; and
(b) outside Barbados for more than 6 years in the case of trees or vines, or longer than 4 years in the case of other plants, before the effective filing date in Barbados.
(2) It shall not be considered detrimental to the novelty of a variety if the propagating or harvested material of that variety has been sold or otherwise disposed of in Barbados with the authorisation of its breeder or his successor in title for a period not exceeding 4 years prior to the inclusion of the genus or species to which the variety belongs in the list of genera and species specified in an order made by the Minister under section 5(1), and for a period not exceeding 6 months after such inclusion, where the application is filed within that 6-month period."

[95] Section 7 of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) A variety shall be considered 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 or where relevant, at the priority date.
(2) Subject to subsection (1), common knowledge may be established by reference to the following factors:
(a) exploitation of the variety already in progress;
(b) grant of a plant breeder's right in the variety;
(c) entry of the variety in a catalogue of varieties admitted to trade;
(d) entry in the register of varieties kept by a recognised professional association; or
(e) inclusion of the variety in a reference collection. (3) The filing, in any State, of an application for a plant breeder's right, or for entry in a catalogue of varieties admitted to trade, shall be deemed to render the variety the subject of the application a matter of common knowledge from the date of the application, if the application leads to the grant of the breeder's right or the entry in the catalogue, as the case may be."

	HOMOGENY[96]	Plants must show the same expression of the same characteristics.	This requirement is subjected to the variation that may be expected from the features of propagation for the plant variety. Cannabis is a phenotypically plastic plant, this may cause appearance differences across the same strain, which may affect the ability to satisfy this criterion[97].
	STABILITY[98]	After repeated propagation, the plant must continue to have the same characteristics.	Doctoral research on the consistency of cannabis products, found that there are genetic inconsistencies amongst cannabis strains. This may be an indication of possible challenges regarding stability in cannabis genes[99].

[96] Section 8 of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"A variety shall be considered to be homogenous if its plants show the same expression of the same characteristics, subject to the variation which may be expected in view of the particular features of its propagation."
[97] Jeremy De Beer and Alyssa Gaffen, 'Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity', (2017) 50 UBC L Rev 621
[98] Section 9 of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"A variety shall be considered to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle."
[99] Katie-Leigh Corder 'How UNC Researchers are Studying Cannabis,' (University of Northern Colorado, 23 August 2018) < https://www.unco.edu/news/articles/unc-cannabis-research-projects.aspx> accessed 6 April 2021

	VARIETY DENOMINATION[100]	A plant under consideration for a PBR must, within 3 months of filing the application, give a variety denomination in accordance with Article 27.	The name must accurately represent the variety, in terms of characteristics. It must not suggest that a variety is related or derived from another variety. This name will differ from the name under which the derived product will be sold.

[58] The criteria in the table above, with the exclusion of variety denomination, require skilled persons, as well as facilities to conduct the tests. To ensure stability, breeders require specific environments. An example of such, is a Tissue Culture (TC) lab, which is used for propagation research. The Ministry of Agriculture and Food Security in Barbados has a TC lab, which is regulated to ensure stability.[101] The University of the West Indies Cave Hill also has individuals with expertise in the propagation and amelioration of cannabis strains. Therefore, Barbados has both the facility and skilled persons needed to carry out the required tests. Once cannabis plants are eligible for protection under the Plant Variety Act, these inputs will help to make Barbados an attractive investment destination for the medicinal cannabis industry.

[59] ***Applying for a plant breeder's right:***

In addition to satisfying the above criteria, an applicant must be a citizen or resident of Barbados or a citizen or resident of a contracting party to the TRIPS Agreement.[102]

[100] Section 27 (1) of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) The applicant for a plant breeder's right shall, within 3 months of the filing of the application, propose on the form issued by the Director for that purpose a variety denomination in accordance with subsection (4)."

[101] Ministry of Agriculture and Food Security, < https://agriculture.gov.bb/Departments/Tissue-Culture-Laboratory> accessed 6 April 2021

[102] Section 12 (1) of the Protection of New Plant Varieties Act, Cap. 267 (2002)
"(1) An application for the grant of a plant breeder's right may be made by the owner of a variety
(a) who is a citizen or resident of Barbados;
(b) who is a citizen or resident of a Contracting Party; or
(c) who is a citizen or resident of any State which, without being a contracting party, grants reciprocity of treatment to Barbados."

[60] ***Duration and Scope of right:***

Once approved, a PBR will be granted for a cannabis plant for 20 years.[103] Though, maintenance of the right, during this time, is secured via the payment of annual fees which are set out in the plant variety regulations.[104]

[61] ***Exceptions to the right***

The scope of this right may be limited by specified exceptions in the New Plant Varieties Act.[105] The following acts will not infringe the IP holder's rights:

- Acts done privately by an individual
- Acts done for non-commercial purposes
- Acts done for experimental purposes such as for developing a new variety

[62] Section 16(2)[106] exempts certain use of the protected variety, by farmers. Pursuant to the regulations, a farmer may be permitted to use protected material, for production or propagating purposes. However, they may not sell the propagated material. This exception reflects UPOV 1991.[107] This Article in UPOV 1991 may significantly restrict farmer's rights by preventing them from selling their propagated material. Furthermore, this article primarily protects the legitimate interests of the breeder, rather than the famers potential rights.

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[103] Section 19 of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) Subject to subsection (2), the plant breeder's right in respect of vines, forest trees, fruit trees and ornamental trees including, in each case, their rootstocks, shall expire 25 years after the grant thereof.
(2) Protection for all genera or species, other than that mentioned in subsection (1), shall expire 20 years after the grant thereof.
(3) Where in the cases referred to in section 6(2) a variety has already been offered for sale or marketed in Barbados for a period of more than one year before the date of the filing of the application, the duration of the protection shall be reduced by the number of full years minus one year that have elapsed since the beginning of the offering for sale or the marketing, as the case may be, with the consent of the plant breeder or his successor in title, before the filing of the application."

[104] Protection of New Plant Varieties Regulations, 2001

[105] Section 16(1) of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(1) The plant breeder's right shall not extend to
(a) acts done privately by an individual;
(b) acts done for non-commercial purposes;
(c) acts done for experimental purposes; and (d) acts done for the purpose of breeding other varieties and, except where the provisions of section 15(5) apply, acts referred to in section 15(1) in respect of the other varieties."

[106] Section 16 (2) of the Protection of New Plant Varieties Act, Cap. 267 (2002):
"(2) The Minister may by regulations which protect the legitimate interests of the holders of plant breeders' rights restrict the rights in relation to the varieties of any specified plant genera or species, in order to permit farmers to use, for propagating purposes on their own holdings, the product of the harvest which the farmers have obtained by planting on their own holdings the protected variety or a variety mentioned under section 15(5)(a) or (b)."

[107] Article 15(2), International Convention for the Protection of New Varieties of Plants (1991):
"(2) [Optional exception] Notwithstanding Article 14, each Contracting Party may, within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety or a variety covered by Article 14(5)(a)(i) or (ii)."

3.3.2 REQUIREMENTS PRIOR TO APPLICATION

[63] Before applying for a plant breeder's right for cannabis, one must establish their breeding goals, that is, the characteristics that you wish for your plant to possess. In addition, environmental factors must be assessed. The environment in which a plant is cultivated can result in the expression of different phenotypes. Differing phenotypes can lead to different strains of cannabis. These differences can cover chemical make-up, such as levels of Delta-9-tetrahydrocannabinol (THC) in a plant, to the physical appearance of a plant (for example breeding a shorter plant for indoor purposes).

[64] Barbados' environment is unique in the Caribbean, due to a variety of factors. Firstly, Barbados is a limestone-based island. This results in calcium-rich soil, which can positively affect the storing of cannabinoids in a cannabis plant.[108] Secondly, Barbados' topography is distinct to other Caribbean islands, as the land is flatter rather than predominantly hilly. Flat land prevents cross-fertilization problems. Barbados' location as the eastern-most island in the Lesser Antilles and the proximity to the equator creates a moderate tropical climate that is ideal for cannabis cultivation.[109]

[65] Protecting the propagated material through IPRs is therefore crucial. Barbados' unique environment has the potential to produce distinct varieties of cannabis. This will be vital to attracting both foreign investment and trade in the medicinal cannabis industry. However, the domestic IP framework, like the Barbados Plant Variety Act, excludes the capability of protecting the cannabis plant/seed. In chapter 6, recommendations for amending this framework will be suggested, to achieve the necessary IP protection for cannabis.

[108] D. Civantos 'How to use dolomite as an organic fertiliser for your cannabis plants' <https://www.dinafem.org/en/blog/how-to-use-dolomite-organic-fertiliser-cannabis-plants/> accessed 6 April 2021
[109] Pat Goggins, 'Growing in Paradise: A Beginner's Guide to Outdoor Cannabis in Tropical Climates' (Leafly 2019) < https://www.leafly.com/news/growing/beginners-guide-outdoor-cannabis-tropical-climates > accessed 28 May 2021

3.4 PROTECTING EXTRACTION PROCESSES IN THE BARBADIAN CANNABIS INDUSTRY

[66] Once a strain of cannabis has been identified and cultivated, methods of extraction are utilized. This is the next step along the cannabis value chain. The cannabis plant contains more than 500 different chemicals. The primary bioactive chemicals are referred to as 'phytocannabinoids'. For the medicinal industry, Delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are most relevant.[110] Globally, Companies in the cannabis industry are racing to invent the most efficient extraction methods. With efficiency comes a competitive edge, but it must be balanced with speed and quality. There must also be predictability regarding yield and cannabinoid levels.[111] The extraction of cannabinoids can be protected by patents. Protection over the process also ensures protection over the product.

3.4.1 ACQUIRING A PATENT FOR EXTRACTION PROCESSES IN BARBADOS

[67] Article 27 of the TRIPS Agreement provides the minimum standards for patentable subject matter. Any invention, whether a product or process, in all fields of technology, which satisfy patent criteria, may be patented.[112] The requirements to receive a patent in Barbados have been set out above, in Table 8. However, a potential challenge for the granting of a patent for the extraction processes, is provided in Section 11(f) of the Patent Act. Based on Section 11(f), an invention, contrary to public order or morality is

[110] Joseph Wyse, Gilad Luria, 'Trends in Intellectual Property Rights Protection for Medicinal Cannabis and Related Products' (2021) Journal of Cannabis Research < https://doi.org/10.1186/s42238-020-00057-7 > accessed 22 March 2021 pg. 2
[111] Ibid, at 110
[112] Art 27(1), The Agreement on Trade-Related Aspects of Intellectual Property Rights (1994)
"Subject to the provisions of paragraphs 2 and 3, 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.5 Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Article, 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."

excluded from patentability.[113] The exclusion of a patent on moral considerations may occur at one of two stages in the patent process: (i) an invention is not awarded a patent on the grounds that it is found to be immoral, or (ii) a patent may be granted but the invention may not be allowed to be used, due to immorality. The following section will examine the relationship between morality and patentability.

3.4.2 MORALITY AND PATENTABILITY

[68] The exclusion of a patent, on moral considerations, is debatable. The grant of a patent does not equate to the automatic grant of usage. In other words, the grant of a patent does not mean that a patentee can use it. There may be other barriers, such as permission to extract cannabinoids and using them in manufacturing products required from the BMCLA.

[69] As Warren Jones provides, denial of a patent on morality grounds is "misplaced."[114] If the exclusion hurdle can be overcome, and the remaining four requirements satisfied, one may be granted a patent for 20 years.[115] However, one must maintain the right by paying the annual fees.[116] Once an application has been approved, a patent will be registered.

[113] Section 11(1) (f) of the, Patent Act of Barbados, Cap 314:
"(1) Whether or not they constitute an invention within the meaning of this Act, the following are not patentable under this Act, namely:
(f) an invention, the commercial exploitation of which would be contrary to public order or morality or which is prejudicial to human or animal health or to plant life or to the environment."
[114] Amanda Warren Jones "Vital parameters for patent morality – a question of form", <https://www.researchgate.net/publication/249286288_Vital_parameters_for_patent_morality_a_question_of_form > accessed 6 April, 2021, page 832
[115] Section 29 (1) of the Patent Act of Barbados, Cap 314:
"(1) Subject to subsection (2), a patent expires 20 years after Duration of patent. the filing date accorded the application for that patent under section 25 or section 35 as the case may be."
[116] Section 29 (2) of the Patent Act of Barbados, Cap 314:
"(2) In order to maintain a patent or patent application, the prescribed annual fee shall be paid in advance to the Director for each year, starting one year after the filing date of the application for the grant of the patent and, in the case of an international application, one year after a national application for a patent has been made."

3.5 ACHIEVING RESEARCH AND DEVELOPMENT GOALS WITH GEOGRAPHIC INDICATORS

[70] Barbados' vision for the industry includes research and development efforts to acquire local cultivar phenotypes. This can be protected by seeking a Geographical Indication (GI). This approach provides protection for cultivation which is uniquely based on the soil composition in the area, the quality of the water source available, and the amount of light the developing plant has access to. Each of these factors works together to facilitate the discovery of unique traits for cannabis cultivated in a given geographical location.

[71] According to WIPO "*a geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.*"[117] Protection for GI at a national level is influenced by the Trips Agreement (TRIPS), Articles 22 to 24.[118] As outlined in the articles, signatories are required to provide protection for owners via national laws for GIs registered within the member state.
Rights provided for under this IPR are limited to the territory or country where the GI is registered, and protection granted. Protection may be granted via sui generis type systems, collective or certification marks and structures focusing on business practices.[119] Unlike a Trademark, a GI cannot be licensed outside of the place of origin. Moreover, rights over the GI belong to the owners only within the specified GI area. GIs operate based on differentiation, where the place of origin is used as a unique identifier to be associated with the distinctive characteristics or qualities of a product.

[72] An example of a potential GI in the region may be found in Jamaica. Orange Hill is a rural district celebrated for its cultivation of top-grade cannabis. Its soil composition, water source and light intensity all contribute to the unique chemical make-up of cannabis

[117] WIPO, 'Frequently Asked Questions: Geographical Indications <https://www.wipo.int/geo_indications/en/faq_geographicalindications.html > accessed 23 April 2021
[118] Articles 22 to 24, TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) < https://www.wto.org/english/docs_e/legal_e/trips_e.htm#part2_sec3 > accessed April 23 2021
Ibid art 27 (3) (b)
[119] WIPO, 'Geographical Indications' < https://www.wipo.int/geo_indications/en/> accessed 23 April 2021

grown in the region.[120] The use of GIs would therefore provide greater protection to local producers in Orange Hill looking to capitalise on the use of this unique cannabis strain. An advantage of having a GI is the marketing and promotion privileges, using this IPR will attract a premium price and help secure revenue.[121] Thus, if Barbados secures a GI for a unique cannabis strain, this may be used as a tool to facilitate the promotion of trade and investment in the medicinal cannabis industry.

[73] The need to fully document and understand the environment in which a GI is located is critical to the application process. There must be clear identification of the characteristics of the cannabis plant and detailed guidelines for the cultivation and manufacturing process required to successfully cultivate the desired output. This IPR is used to protect the quality and reputation of the product and is an opportunity to give recognition to the distinctiveness of the product distinguishing it from similar products.

[74] The Geographical Indications Act 2002, Section 8 (3)[122] provides that the application for the registration of a GI should specify: (i) the nationality of the person making the application; (ii) the GI for which registration is sought; (iii) the area to which the GI applies; (iv) the goods to which the GI applies and (v) the quality or other characteristics of the goods for which this GI is used. Therefore, any medicinal cannabis product satisfying these requirements should be capable of receiving GI registration in Barbados.

[120] The Gleaner, Weed Ed- Protecting Jamaica Ganja Brand' (2019) < https://jamaica-gleaner.com/article/news/20190121/weed-ed-protecting-jamaica-ganja-brand > accessed 28 May 2021

[121] Ibid, at 121

[122] Section 8 (3) of the Geographical Indications Act Barbados, Cap 320 (2001):
" (3) An application for the registration of a geographical indication shall specify
(a) the name, address and nationality of the person making the application, and the capacity in which the applicant is applying for registration;
(b) the geographical indication for which registration is sought;
(c) the geographical areas to which the geographical indication applies;
(d) the goods to which the geographical indication applies; (e) the quality, reputation or other characteristic of the goods in respect of which the geographical indication is used, and shall be accompanied by the prescribed fee."

3.6 ASSESSMENT OF JAMAICA'S IPR REGIME

[75] With this understanding of Barbados' national IP framework, it will be useful to compare this framework to Jamaica's IP regime for medicinal cannabis. Since 2015, the Jamaican government and Jamaican Intellectual Property Office (JIPO) have recognized the importance of IP to the Jamaican cannabis industry.[123] The focus has primarily been on encouraging applications for geographical indicators (GI) for Jamaican cannabis.

[76] Jamaica's world-renowned history with cannabis creates an opportunity to incorporate the protection of traditional knowledge into the cannabis industry, to help leverage mutual benefit for both local producers and international investors.[124] The UWI Mona/Swansea University report echoes the Jamaica's government call for the protection of traditional knowledge and has recommended the development of a National Genetic Bank.[125] A report published by BOTEC analysis has also suggested that Jamaica develop a cannabis seed bank, to help enter a niche segment of the global cannabis market and assist Jamaica's local IP strategy.[126]

[77] The Jamaican government has also guaranteed the development of Plant Breeder Legislation, having recognized that it can assist the development of the medicinal cannabis

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[123] Loop Lifestyle, 'MEDS: Using intellectual property to protect Jamaican ganja' (Loopnews Jamaica, August 14 2019) https://jamaica.loopnews.com/content/meds-using-intellectual-property-protect-jamaican-ganja> accessed 29 May 2021

[124] Joseph Wyse, Gilad Luria, 'Trends in Intellectual Property Rights Protection for Medicinal Cannabis and Related Products' (2021) 3(1) Journal of Cannabis Research < https://doi.org/10.1186/s42238-020-00057-7 > accessed 30 May 2021, page 18

[125] Axel Klein and Vicki J. Hanson, 'Ganja Licensing in Jamaica Learning lessons and setting standards', <http://fileserver.idpc.net/library/Ganja_licensing_in_Jamaica.pdf> accessed 30 May 2021, page 13-14, 17; Steven Davenport and Bryce Pardo', A Regulated Cannabis Industry for Jamaica', BOTEC Analysis Corporation, <https://www.cla.org.jm/sites/default/files/documents/BOTEC-Jamaica%20Report.v1a.pdf> accessed 30 May 2021, page 57-58

[126] Axel Klein and Vicki J. Hanson, 'Ganja Licensing in Jamaica Learning lessons and setting standards', <http://fileserver.idpc.net/library/Ganja_licensing_in_Jamaica.pdf> accessed 30 May 2021, page 13-14, 17; Steven Davenport and Bryce Pardo', A Regulated Cannabis Industry for Jamaica', BOTEC Analysis Corporation, <https://www.cla.org.jm/sites/default/files/documents/BOTEC-Jamaica%20Report.v1a.pdf> accessed 30 May 2021, page 57-58

industry.[127] Despite this, the government is yet to pass such legislation. However, the National Seed Policy and Action Plan launched in 2019, includes the promulgation of Plant Breeder Legislation.[128] The current absence of such legislation, coupled with the exclusion from protection under the current Patent Act[129], leaves no protection for cannabis varieties in Jamaica. Additionally, Jamaica is not a party to the Nagoya Protocol or the 1991 UPOV Convention. Though, like Barbados, they have been in contact with the office of UPOV as of February 22nd, 2021, for assistance with the development of their laws to be in conformity with the 1991 UPOV Act.

3.7 SUMMARY

- Article 27(3)(b) of the TRIPS Agreement gives discretion to WTO member states to choose how they wish to protect plant varieties

- S11 (e) of Barbados' current Patent Act s excludes plant varieties from receiving protection, as plant varieties under this Article are omitted from patentability

- Alternatively, PBRs are an internationally recognised IPR used to protect unique plant varieties. They stimulate innovation in plant breeding which may lead to economic and social development within a State, through generating economic revenue or producing varieties which will not succumb to disease. Apart from the five criteria that must be satisfied in order to qualify for a PBR, a plant variety must currently be included on the closed list of plant genera, provided by the Barbados Protection of New Plant Varieties Order. Cannabis is not currently on this list

[127] 'Government developing intellectual property law to protect plant breeders' (Jamaica Observer, 12 December 2015) <https://www.jamaicaobserver.com/news/Gov-t-developing-intellectual-property-law-to-protect-plant-breeders> accessed 30 May 2021

[128] Jamaican Parliament, 'National Seed Policy and Action Plan' <https://japarliament.gov.jm/attachments/article/2165/National%20Seed%20Policy%20and%20Action%20Plan%20-%20White%20Paper%20%5bMICAF%5d.pdf> accessed 30 May 2021

[129] The Patents and Designs Act of Jamaica 2020, s 8(a) (c)

- Barbados has a unique agricultural climate. This unique climate will attract investors to Barbados hoping to monopolize on the growing environment, which will lead to economic trade and foreign investment in Barbados' medicinal cannabis industry. However, to promote this trade and investment in the industry, Barbados will need to be equipped with an IP regime that may protect new plant varieties. The current domestic laws surrounding patents and plant variety rights do not offer such protection. However, they are poised with the potential to do so

- Geographical indicators are another IPR that may be used in the medicinal cannabis industry. This IPR will be useful if Barbados wishes to acquire local cultivar phenotypes, essentially creating a unique strain of cannabis for Barbados' industry. This will give Barbados a niche advantage in the cannabis market globally

- In sum, though mechanisms for protecting new plant varieties exist, protection is not currently available for cannabis varieties. Further down the value chain, novel and non-obvious extraction processes may be protected by a patent. This leaves arguably the most vital asset in the cannabis value chain – the cannabis plant – potentially vulnerable

- Chapter 6 of this paper will explore the options available for expanding protection to the cannabis plant, while ensuring the balance between the rights of foreign investors and small farmers entering the industry

- The following chapter will discuss the multilateral framework of IPRs, assessing the international treaties and conventions that Barbados is and is not a Party to

CHAPTER 4: THE MULTILATERAL FRAMEWORK OF INTELLECTUAL PROPERTY RIGHTS

- ***Section 4.1*** *introduces the multilateral nature of Intellectual Property Rights. It will also briefly discuss the two primary international organizations that deal with intellectual property matters*
- ***Section 4.2*** *outlines the various Intellectual Property Rights that are relevant for the Medicinal Cannabis Industry. This will include Plant Breeder's Rights, Utility Patents and Plant Patents*
- ***Section 4.3*** *assesses the international treaties that Barbados is a party to. These treaties will be examined for the relevant IPRs that are pertinent to the Medicinal Cannabis Industry*
- ***Section 4.4*** *outlines the international treaties that Barbados is not yet a party to. This will include the UPOV Convention, and the Nagoya Protocol*

4.1 THE MULTILATERAL NATURE OF INTELLECTUAL PROPERTY RIGHTS

[78] The two primary international organizations that deal with IP matters are the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO). The WTO was established at the 1995 Uruguay round and resulted in numerous agreements on trade, including the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement). This agreement came into effect on the 1st of January 1995 and is considered the benchmark standard for a variety of IPRs.[130]

[79] Comparatively, the WIPO focuses primarily on IPRs, rather than the WTO's broad focus of international trade. WIPO aims to administer a group of IPR treaties establishing minimum standards for member states.

[130] Joseph Wyse, Gilad Luria, 'Trends in Intellectual Property Rights Protection for Medicinal Cannabis and Related Products' (2021) Journal of Cannabis Research < https://doi.org/10.1186/s42238-020-00057-7 > accessed 22 March 2021 pg. 2

[80] This Chapter will examine the international regulatory framework of IPRs and the minimum standards of protection and enforcement that these treaties guarantee. This analysis will be contextualized to the primary international IPR treaties and bodies that have relevancy within the medicinal cannabis industry, including:

- TRIPS Agreement
- WIPO Convention
- UPOV Convention
- Patent Cooperation Treaty
- Paris Convention on the Protection of Industrial Property

4.2 THE INTELLECTUAL PROPERTY RIGHTS RELEVANT TO THE MEDICINAL CANNABIS INDUSTRY

[81] The diagram below demonstrates the medicinal cannabis supply chain. IPR protection is crucial for every step represented, from cultivation to retail.[131]

Figure 2: The Medicinal Cannabis Supply Chain

[82] The relevant IPRs for this supply chain, that will be examined include utility patents and plant breeder's rights/ plant variety protection rights. Other IPRs that will be considered in these international treaties include trade secrets, copyrights, geographical indicators and trademarks.

[131] Jeremy De Beer and Alyssa Gaffen, "*Intellectual Property Rights in The Recreational Cannabis Market: Craft or Commodity?",* (2017) 50 UBC L Rev 621

4.3 THE INTERNATIONAL CONVENTIONS AND TREATIES THAT BARBADOS IS PARTY TO

[83] The majority of states in the Caribbean, like Barbados follow the common law system.[132] Under this system, the doctrine of dualism is adopted.[133] This doctrine does not recognise the direct enforceability of ratified treaties. Rather treaties are "merely influential" until incorporated into domestic law by statute.[134] Thus, in Barbados, a treaty must undergo legislative incorporation, before becoming enforceable. Within Barbados, the Constitution grants the Parliament the power to make laws.[135] Typically, parliamentary authorisation to incorporate treaties is preliminary and comes before the act of accession.[136] Therefore it may be assumed that before Barbados accedes to a treaty, parliamentary authorisation is granted to incorporate this treaty into national law. The table below will highlight the international treaties and conventions that Barbados is a party to in the area of IPRs.

Table 10: International Treaties that Barbados is a Party to

	ACCESSION
WIPO CONVENTION	July 4th 1979
TRIPS AGREEMENT	January 1st 1995
PATENT COOPERATION TREATY	December 11th 1984
THE PARIS CONVENTION	December 11th 1984

[132] Alejandro Morlachetti, 'Current State of Social Protection Legislation in Barbados the OECS' (Food and Agriculture Organization of the United Nations 2015) < http://www.fao.org/3/i4688e/i4688e.pdf > accessed 10 Jun 2021. 9

[133] Rose-Marie Belle Antoine, *Commonwealth Caribbean- Law and Legal Systems* (Routledge-Cavendish 2nd edn) 41

[134] Ibid, at 134

[135] The Constitution of Barbados 2002, s48 (1):
"Subject to the provisions of this Constitution, Parliament may make laws for the peace, order and good government of Barbados."

[136] C Economides, 'The Relationship Between International and Domestic Law' (Venice Commission 1993) < https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-STD(1993)006-e > accessed 10 Jun 2021

These treaties will now be examined individually:

I. WIPO Convention

[84] The WIPO Convention is the constituent instrument of the World Intellectual Property Convention. IP is defined under Article 2 (viii) and includes industrial designs, trademarks, service marks, and commercial names.[137] In WIPO's function to facilitate the efficient protection of intellectual property globally, these rights are all included under the scope of protection.

[85] WIPO administers 26 international treaties that concern a wide variety of IP issues, ranging from the protection of broadcasts to establishing international patent classification.[138] WIPO enjoys legal capacity within each member state as is necessary to fulfil their objectives and functions.[139] WIPO has been instrumental in shaping international IPR rules, laws and policies, as well as working closely with governments, non-governmental organizations and individuals to achieve socioeconomic development through IPRs.

II. *TRIPS Agreement*

[86] Barbados has been a WTO member since 1st January 1995 and a member of WTO's predecessor GATT since 15th February 1967. Thus, as a WTO member, Barbados is bound under the TRIPS Agreement by general obligations to protect plant varieties.

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[137] Article 2 of the Convention Establishing the World Intellectual Property Organization:
" 2(viii): "*intellectual property" shall include the rights relating to: literary, artistic and scientific works, performances of performing artists, phonograms, and broadcasts, inventions in all fields of human endeavour, scientific discoveries,*
industrial designs, trademarks, service marks, and commercial names and designations, protection against unfair competition, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields."

[138] WIPO, 'Treaties administered by WIPO' (World Intellectual Property Organization) <https://www.wipo.int/treaties/en/> accessed 21 March 2021

[139] Article 12 of the Convention Establishing the World Intellectual Property Organization:
"*The Organization shall enjoy on the territory of each Member State, in conformity with the laws of that State, such legal capacity as may be necessary for the fulfilment of the Organization's objectives and for the exercise of its functions."*

[87] Article 27 of the TRIPS Agreement[140] is the primary article guaranteeing protection of plant varieties through patents. Article 27 (3) (b)[141] introduces a caveat for member states to exclude from patentability plants and animals. However, despite this caveat, Article 27 (3) (b) does state that Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or any combination thereof. Article 27 further establishes, that a Member State has the right to deny a patent for a plant however they must provide patents for IPR in relation to "plant variety". The term "plant variety" is not defined within TRIPS. This allows WTO members to adopt at their discretion a definition of this concept.

[88] The *Intellectual Property Rights in Plant Varieties Report* discusses the various sui generis systems that Member States may adopt to fulfil their obligations under Article 27 of TRIPS.[142] This included sui generis systems like the 1991 UPOV Act.

In sum, TRIPS[143] provides for four policy options for member states: (i) sui generis system, (ii) patenting of plant varieties, (iii) a combination of a sui generis system and patenting plant varieties and (iv) sui generis system for plant varieties only. Member States enjoy greater discretion under Article 27 as well, as plant varieties are not a defined concept.

III. Patent Cooperation Treaty

[89] The Patent Cooperation Treaty (PCT) is an international patent law treaty concluded in 1970 which came into force in Barbados on March 11th, 1985. This treaty allows the patent protection for an invention simultaneously in a large number of countries by filing an "international" patent application.[144.] Filing a PCT application has the effect of

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[140] TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) art 27:

[141] Ibid at 141. Article 27 (3) (b):

"*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."*

[142] Helfer, L., 2004. Intellectual Property Rights in Plant Varieties. FAO Legislative Study. [online] FAO Legal Office, Section 3.4.1.1 < http://www.fao.org/3/y5714e/y5714e04.htm#TopOfPage > accessed 22 March 2021

[143] TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994)

[144] WIPO, 'Summary of the Patent Cooperation Treaty' (World Intellectual Property Organization) <https://www.wipo.int/treaties/en/registration/pct/summary_pct.html> accessed 21 March 2021

automatically designating all Contracting States bound by the PCT on the international filing date.

[90] A single filing of a PCT application is made with a Receiving Office, which then results in a search performed by an International Searching Authority, accompanied by a written opinion regarding the patentability of the invention. Filing an international patent through the PCT offers many advantages for applicants, patent offices and the general public, including:[145]

- applicants have up to 18 months more than if they had not used the PCT to reflect on the desirability of seeking protection in foreign countries
- applicants are assured that once their international application is in the form prescribed by the PCT, it cannot be rejected on formal grounds by any designated office
- since each international application is published with an international search report, third parties are in a better position to formulate a well-founded opinion about the potential patentability of the claimed invention
- Applicants and patent offices of contracting states benefit from uniform formality requirements.

[91] "Patent" is defined under Article 2 of the PCT.[146] The extensive nature of this definition can encompass any invention that is derived through medicinal cannabis, whether it be methods of creation of cannabinoids, or simply the invention of the process of extraction for the plant itself.

[92] A recent use of the PCT procedure occurred in November 2020, where Cannabis Global filed an application to protect their unique cannabinoid infusion system for beverages, foods and consumer products, believing that their technology was revolutionary to the

[145] WIPO, 'Summary of the Patent Cooperation Treaty' (World Intellectual Property Organization) <https://www.wipo.int/treaties/en/registration/pct/summary_pct.html> accessed 21 March 2021

[146] Article 2 of the Patent Cooperation Treaty:

"*references to a "patent" shall be construed as references to patents for inventions, inventors' certificates, utility certificates, utility models, patents or certificates of addition, inventors' certificates of addition, and utility certificates of addition"*

cannabis industry, therefore warranting some form of protection.[147] By filing this successful application under the PCT, Cannabis Global simultaneously seeks protection of the invention in up to 150 countries.[148]

[93] Despite these benefits, plant varieties are not patentable in Barbados. As discussed in Chapter 3, Article 11 (e) of the Patents Act excludes plant varieties from patentability. This may be a potential challenge for the Barbadian medicinal cannabis industry, as potential investors may not be allowed to receive a patent for their cannabis variety or file an international patent application under the PCT.

[94] In sum, potential investors in the Barbadian medicinal cannabis industry should be capable of using this PCT procedure for an international patent application for their unique cannabis varieties.

IV The Paris Convention for the Protection of Industrial Property

[95] The Paris Convention on the Protection of Industrial Property was one of the first intellectual property treaties, established in 1883 (revised in 1967). It came into force in Barbados in 1985. The treaty applies to industrial property in the widest sense, including patents, trademarks, and utility models.[149] Its contents can be divided into three main categories.

- National treatment: Article 2 (1) provides, for the protection of industrial property, each Contracting State must grant the same protection to nationals of other Contracting States that it grants to its own nationals.[150]

[147] Access Wire, 'Cannabis Global Files PCT Application for International Protection of Cannabinoid Delivery System for Beverages, Foods and Consumer Products' (AP News, 5 November 2020) <https://apnews.com/press-release/accesswire/business-technology-products-and-services-government-regulations-consumer-protection-and-advocacy-2dfc41f113f16f91304e16d257e8aa7f> accessed 21 March 2021
[148] Ibid, at 148
[149] WIPO, 'Summary of the Paris Convention for the Protection of Industrial Property' (World Intellectual Property Organization) < https://www.wipo.int/treaties/en/ip/paris/summary_paris.html> accessed 21 March 2021
[150] Article 2 of the Paris Convention on the Protection of Industrial Property:

- Right of priority: This right is established by Article 4 (A). This allows an applicant from one contracting State to use its first filing date as the effective filing date in another contracting State.[151]

- Common Rules: These are the Rules that all contracting parties must follow with regard to industrial property:

[96] Patents

Patents operate independently of each other. Patents granted in different Contracting States for the same invention are independent. The granting of a patent in one Contracting State does not oblige other Contracting States to grant a patent. Thus, if a patent is granted in Antigua and Barbuda to Barbados for their unique invention in the medicinal cannabis process, Jamaica is not obliged to grant the same patent. However, the grant of a patent may not be refused, and a patent may not be invalidated, on the ground that the sale of the patented product, or of a product obtained by means of the patented process, is subject to restrictions or limitations resulting from the domestic law.[152]

[97] Marks

The Paris Convention does not regulate the conditions for the filing and registration of marks which are determined in each Contracting State by domestic law. Consequently, no application for the registration of a mark filed by a national of a Contracting State may be refused, nor may a registration be invalidated. The registration of a mark obtained in one Contracting State is independent of its possible registration in any other country, including

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"*Nationals of any country of the Union shall, as regards the protection of industrial property, enjoy in all the other countries of the Union the advantages that their respective laws now grant, or may hereafter grant, to nationals; all without prejudice to the rights specially provided for by this Convention.*
Consequently, they shall have the same protection as the latter, and the same legal remedy against any infringement of their rights, provided that the conditions and formalities imposed upon nationals are complied with."

[151] Article 4 of the Paris Convention on the Protection of Industrial Property:
"*(1) Any person who has duly filed an application for a patent, or for the registration of a utility model, or of an industrial design, or of a trademark, in one of the countries of the Union, or his successor in title, shall enjoy, for the purpose of filing in the other countries, a right of priority during the periods hereinafter fixed."*

[152] WIPO, 'Summary of the Paris Convention for the Protection of Industrial Property' (World Intellectual Property Organization) < https://www.wipo.int/treaties/en/ip/paris/summary_paris.html> accessed 21 March 2021

the country of origin; consequently, the lapse or annulment of the registration of a mark in one Contracting State will not affect the validity of the registration in other Contracting States.[153]

[98] Industrial Designs

Industrial designs must be protected in each Contracting State, and protection may not be forfeited on the ground that articles incorporating the design are not manufactured in that State.

[99] Trade Names

Protection must be granted to trade names in each Contracting State without there being an obligation to file or register the names.

[100] Unfair Competition

Each Contracting State must provide for effective protection against unfair competition.[154]

[101] Barbados, as a party to the Paris Convention, should be aware of these common rules that may provide adequate protection for potential stakeholders in the medicinal cannabis industry. The range of rights provided for, throughout this Convention, contribute to the well-established IPR regime that Barbados may offer to a potential investor.

[153] Ibid, at 153
[154] WIPO, 'Summary of the Paris Convention for the Protection of Industrial Property' (World Intellectual Property Organization) < https://www.wipo.int/treaties/en/ip/paris/summary_paris.html> accessed 21 March 2021

4.4 TREATIES AND CONVENTIONS THAT BARBADOS IS NOT A PARTY TO

I. UPOV

4.4.1 INTRODUCTION TO UPOV

[102] The UPOV Conventions were first adopted in 1961 as a result of the Diplomatic Conferences held in Paris in 1957 and 1961. Subsequently, the UPOV Convention was further amended in 1972, 1978 and 1991. The UPOV Report states that this body continues to be the only internationally harmonized, effective sui generis system of plant variety protection.[155] The purpose of the UPOV Convention is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.[156]

[103] UPOV has seen a steady increase in members to their Convention. A possible cause for this, is the adoption of the TRIPS Agreement. [157] Statistics were used to demonstrate this point: In 1994, UPOV had 24 State parties. By 2004 UPOV had 58 States and one IO, the European Community, as members. As aforementioned, the TRIPS Agreement was adopted in 1995. Thus, this increase in membership may be linked to the adoption of this global trade agreement. Furthermore, Article 27 (3) (b) of TRIPS sets out an obligation to protect plant varieties through an effective sui generis system. UPOV may be considered an effective sui generis system, specifically designed to reflect the particularities of breeding, cultivation and use of new varieties of plants. The UPOV Convention can therefore by an off -the- shelf sui generis system of protection for members of the TRIPS Agreement. The map below indicates UPOV members as of 22nd February 2021:

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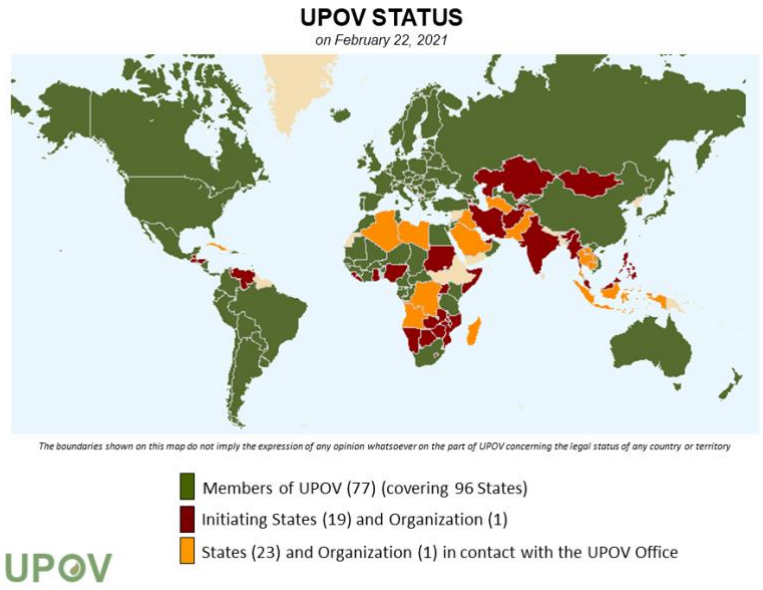
[155] UPOV, 'UPOV Report on the impact of Plant Variety Protection' (2005) pg. 25 < https://www.upov.int/edocs/pubdocs/en/upov_pub_353.pdf > accessed 6 April, 2021

[156] UPOV, 'Mission Statement' (2011) < https://www.upov.int/about/en/mission.html > accessed 6 April 2021

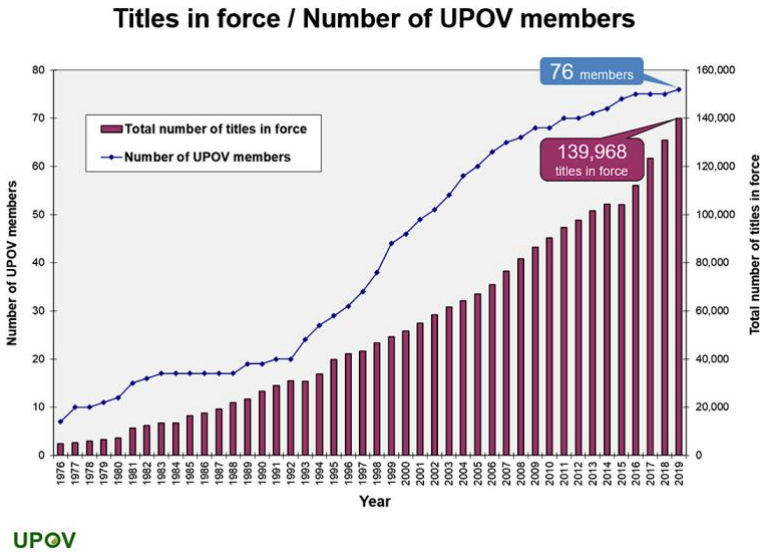
[157] B. Le Buanec, 'Protection of plant-related innovation: Evolution and current discussion' (2006) 28 *World Patent Information* 50,53

Figure 3: Map Illustration of UPOV Members[158]



[104] UPOV Membership has noticeably increased significantly as indicated by this map. Moreover, the Plant Breeder's Titles under UPOV has also increased. This is indicated in the graph below:

Figure 4: Plant Variety Protection Statistics[159]



[158] < https://www.upov.int/members/en/ > accessed 6 April 2021
[159] UPOV, 'Plant Variety Protection Data and Statistics' < https://www.upov.int/databases/en/#QS19 > accessed 12 June 2021

[105] The graph above shows the plant breeder's titles in force under the UPOV sui generis system. From this graph it is clear that there has been an increase of plant breeder's titles in force gradually from 1976 to 2019. This growth in titles is closely related to the growth in numbers of UPOV members. Both the increase in membership and PBR Titles, exemplify that UPOV is becoming an attractive option for sui generis protection of IPRs, specifically plant variety protection.

4.4.2 CASE STUDIES UNDER THE UPOV CONVENTION

[106] The UPOV Convention is a key aspect in a global push to promote food security, reduce climate change and enhance economic development.[160] These case studies, under the UPOV 1978 Act, will be used to demonstrate the effects of the introduction of UPOV's PVP system in these particular countries.

Kenya:[161]

[107] Kenya's provisions for the protection of plant varieties were first introduced by the Seeds and Plant Varieties Act 1972. Kenya acceded to the 1978 Act of the UPOV Convention in 1999 and in 2016, became bound by the 1991 UPOV Act. The move to accede to UPOV, reflects Kenya's recognition of emerging national and international developments in the seed industry. The case study below will highlight the benefits that Kenya saw in both their economic development and foreign investment after improving their IPR regime under UPOV.

[160] Jay Sanderson, 'Why UPOV Is Relevant, Transparent and Looking to the Future' (2013) 8 (8) Journal of Intellectual Property Law & Practice < https://doi.org/10.1093/jiplp/jpt112 > accessed 25 April 2021
[161] UPOV, 'UPOV Report on the Impact of Plant Variety Protection' <https://www.upov.int/edocs/pubdocs/en/upov_pub_353.pdf > accessed 12 June 2021, page 55

Case study 2:

Kenya- The Impact of the PVP System under UPOV

Kenya acceded to the 1978 Act of the UPOV Convention in 1999-, since then the following impacts have been observed:

- An increase in PVP applications
- More varieties of horticultural crops being introduced by foreign investors as well as diversification of the horticultural sector and the development of a trade market for the horticultural products
- Kenya developed an export market for cut flowers, valued at 208 million Euros by 2003
- Both public and private breeders jointly worked together to develop new varieties for crops. An example is the "Quality Protein Maize" that was produced between local seed companies and international research institutes. This has led to a high-quality protein plant fit for human consumption
- PVP facilitates these partnerships allowing new varieties to be commercialized, ensuring all parties receive a profit

[108] Overall, Kenya saw a significantly higher number of varieties developed and released since the introduction of UPOV as a sui generis PVP system.[162] These foreign varieties contributed to the diversification of the horticultural sector and supported the competitiveness of Kenyan products in the global market.[163] An increase in the number of Kenyan-bred varieties of agricultural crops saw an improved performance for local farms.[164] Notably PVP titles were granted to both public institutions and local farms who used these new protected varieties under privilege conditions.[165]

[162] Ibid, at 162
[163] Ibid, at 162
[164] Ibid, at 162
[165] Ibid, at 162

[109] It may be surmised that UPOV helped to facilitate public/ private partnerships for plant breeding, including partnerships between international research institutes and Kenyan seed companies. Holistically, these impacts encouraged economic development within Kenya, as Kenya is received economic revenue from their unique horticultural sector. Moreover, it appears that there may be a link between UPOV and foreign investment, as Kenya saw an increase in foreign investors on its accession to UPOV, which is reflected in the increase in PVP applications from1997. Kenya's PVP system also includes the local farmers and seed companies granting them special concessions, like access to these new protected varieties.

Argentina:[166]

[110] The National Institute of Seeds was created in 1991 and is responsible for PVP. Argentina became bound by the 1978 Act of the UPOV Convention in 1994. In 1994, Law N° 24.376/94 integrated provisions of the 1978 Act of the UPOV Convention into national laws. Argentina provides protection for varieties of all genera and species. The case study below will outline the impact of the UPOV sui generis PVP system in Argentina.

[166] UPOV, 'UPOV Report on the Impact of Plant Variety Protection'
< https://www.upov.int/edocs/pubdocs/en/upov_pub_353.pdf > accessed 12 June 2021

Case Study 3:

Argentina- Foreign Varieties Under UPOV's PVP System

Argentina became bound by the 1978 Act of the UPOV Convention on December 25th, 1994. Since then, the following impacts have been observed:

- A substantial increase in the number of breeder titles was observed
- Encouraged breeding activities for various crops and the improved varieties of crops like soybean. For both soybean and wheat, the contribution of foreign breeders increased after Argentina became a UPOV member. The introduction of this system led to Argentina becoming one of the most important soybean exporters globally, the constant introduction of new high-quality varieties of the Argentine soybean kept the industry constantly competitive. In fact, production has increased from 957 tons in 1961, to 26,882,912 tons in 2001
- The introduction of PVP has released plant varieties into a wide production chain
- The PVP system has also encouraged horizontal cooperation between companies licensing products, carrying out joint development and providing services
- PVP has also provided a basis for Technological Relationship Agreements which facilitate public sector institutes or breeding entities to enter this profitable seed market

[111] The accession of Argentina to the UPOV Convention in 1994 appears to have had a significant influence on the seed industry. The operation of a PVP system in Argentina since 1973, has had the following effects:

- The number of titles granted to non-residents increased from the period 1984-1993. The average annual number of titles granted to foreign breeders was 17, this trebled to 62 in the subsequent 10-year period of 1994-2003.[167]
- New, protected varieties were introduced form non-resident breeders in important agricultural crops like soybean. These improved varieties aided Argentina's competitiveness in the global market.[168]
- Increase in the number of domestic breeding entities occurred in the private sector.[169]

[167] Ibid, at 167
[168] Ibid, at 167
[169] Ibid, at 167

- Increase in horizontal cooperation in the seed industry, involving foreign seed companies and agreements between national research institutes and breeding entities with other national companies. [170]

[112] These impacts similar to Kenya appear to have aided Argentina's economic development through increased competitiveness of their new plant varieties like soybean. Additionally, much like Kenya, under UPOV, Argentina was able to implement a domestic plant variety industry to complement the increase in private entities investing in their horticultural sector.

China: [171]

[113] The Regulations of the People's Republic of China, the Protection of New Varieties of Plants is based on the 1978 Act of the UPOV Convention. China became a member of UPOV in 1999. In China, two authorities operate separate PVP schemes. The Ministry of Agriculture is responsible for the protection of new varieties including herbaceous medicinal materials and ornamental plants. Between April 1999 and October 2004 protection was gradually extended to 41 genera and species.

[114] The State Forestry Administration, the second authority responsible, protects new varieties of forest trees and fruit trees as examples. Between April 1999 and October 2004, protection was gradually extended to 78 genera or species. The State Forestry Administration has established the Office for the Protection of New Varieties of Plants for the administration of PVP. Currently, the Government of China is considering the benefits of acceding to the 1991 UPOV Convention. However, the impact of the current PVP system under UPOV will be examined to show the benefits UPOV has had for China.

[170] Ibid, at 167
[171] UPOV, 'UPOV Report on the Impact of Plant Variety Protection'
< https://www.upov.int/edocs/pubdocs/en/upov_pub_353.pdf > accessed 12 June 2021

Case Study 4:

China- A New PVP System under UPOV

In March 1997 China issued "Protection of New Varieties of Plants" Regulations based on the 1978 UPOV Act. The following effects of this new PVP system have been observed:

- A large number of applications in 1999, in its first year of operation
- Chinese farmers have seen the development of a number of new varieties.
- The Ministry of Agriculture has estimated that at the end of 2004, 502 new protected varieties had been planted
- The financial benefit these new varieties brought to the holders of breeder's rights was estimated to have reached 1.97 billion RMB (US $237 million)
- In Henan Province there has been a clear increase in the numbers of maize and wheat breeders after 1999
- Shandong Denghai Seeds Co. Ltd has seen a revenue of US $91,525,000 in their hybrid seed of maize
- The Shenyang Agricultural Academy hold titles of protection for more than 20 maize hybrid varieties and has received more than US $5 million through PVP
- The profits made across both private and public entities exemplify how lucrative a PVP system is

[115] China's PVP system has only been in operation for 5 years and therefore the full impact of UPOV has not been evaluated. However, from the case study above, it appears that China's PVP system has brought benefits for China.[172] China has seen a rapid uptake by farmers of new protected varieties like maize.[173] The PVP system has also stimulated commercial breeding activities in domestic public research institutes and domestic seed companies.[174] There has also been income generation for breeders, including public research institutions and agricultural universities and the encouragement of further investment in plant breeding.[175]

[172] Ibid, at 172
[173] Ibid, at 172- see case study on Shenyang Agricultural Academy of Sciences hybrid maize varieties.
[174] Ibid, at 172
[175] Ibid, at 172

[116] China is similar to both Argentina and Kenya, as the PVP system under UPOV has encouraged economic development within China, as economic revenue is generated from the new varieties introduced. China has also incorporated domestic breeders and local agricultural research universities into their seed industry, ensuring not only private entities investing are benefiting.

[117] All three of these case studies have demonstrated the benefits of becoming a member to UPOV. Throughout all of the case studies, state parties to the UPOV Convention saw a development of foreign markets and an increase in applications to breed foreign varieties in the States. Moreover, these impacts led to an increase in economic development. However, it must be noted that these benefits were observed under the 1978 Act of the UPOV Convention and not the 1991 Act of the UPOV Convention.

4.4.3 THE ARTICLES GOVERNING THE 1991 UPOV CONVENTION[176]

[118] The table below will examine the key articles of the 1991 Act of the UPOV Convention

Table 11: Summary of UPOV Provisions (1991)

		SUMMARY OF THE ARTICLE	COMMENTS
ARTICLE	**5 (1)[177]**	Lists the criteria to be satisfied for a breeder to be granted a plant variety protection right. These criteria included: (i) new (ii) distinct (iii) uninform and (iv) stable.	UPOV has implemented Guidelines[178] for the conduct of tests for these criteria. This was introduced specifically for the Cannabis Sativa plant.

[176] International Convention for the Protection of New Varieties of Plants of December 2, 1961, as Revised at Geneva on November 10, 1972, on October 23, 1978, and on March 19, 1991
[177] International Convention for the Protection of New Varieties of Plants of December 2, 1961, as Revised at Geneva on November 10, 1972, on October 23, 1978, and on March 19, 1991. Article 5 (1):
"The breeder's right shall be granted where the variety is(i) new, (ii) distinct, (iii) uniform and (iv) stable."
[178] These guidelines may be found at: https://www.upov.int/edocs/tgdocs/en/tg276.pdf

	7[179]	Defines the term distinctness. Here a variety is distinct if it is clearly distinguishable from any other variety that is a matter of common knowledge.	Comparing this to the Guidelines for the cannabis plant, both consistent and clear differences must be observed between the varieties.
	8[180]	Here uniformity is achieved if the variety is sufficiently uniform in its relevant characteristics subject to the variation expected from the features of propagation.	From the Guidelines: • To assess uniformity in seed-propagated varieties, one should refer to the General Introduction on recommendations • To assess vegetatively propagated varieties: an acceptance probability of at least 95 % should be applied.
	9[181]	A variety is stable if its relevant characteristics remain unchanged after repeated propagation.	These Guidelines note that in a case of doubt, stability may be examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as initial material supplied.
	19 (2)[182]	Article 19 (2) states that the duration of breeder's rights shall not be	This is the duration of the plant variety protection that may be obtained under this

[179] Ibid, at 177. Article 7:
"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. In particular, the filing of an application for the granting of a breeder's right or for the entering of another variety in an official register of varieties, in any country, shall be deemed to render that other variety a matter of common knowledge from the date of the application, provided that the application leads to the granting of a breeder's right or to the entering of the said other variety in the official register of varieties, as the case may be."

[180] Ibid, at 177. Article 8:
"*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."*

[181] Ibid, at 177. Article 9:
"*The variety shall be deemed to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation, at the end of each such cycle."*

[182] Ibid, at 177. Article 19 (2):
"The said period shall not be shorter than 20 years from the date of the grant of the breeder's right. For trees and vines, the said period shall not be shorter than 25 years from the said date."

		shorter than 20 years from the date it is granted	UPOV convention. For a plant variety of cannabis sativa once the three criteria above are met, breeder's rights will be granted for a fixed period of time at a minimum of 20 years.

[119] If Barbados wishes to accede to the 1991 Act of the UPOV Convention, Appendix III will provide a guide for accession.

4.4.4 UPOV 1978 VS UPOV 1991

[120] Article 37 of the 1991 Act of the UPOV Convention, paragraph (3)[183] implements the official closing of the 1978 UPOV Act. From the implementation of this Article, no instrument of accession to the Act of 1978 may be deposited. Therefore, States now wishing to join UPOV do not have an option between 1978 or 1991 Act. Notwithstanding, because some states have acceded to the 1978 UPOV the table below compares and contrast the two recent UPOV Conventions to understand the major differences or similarities between them:

[183] International Convention for the Protection of New Varieties of Plants of December 2, 1961, as Revised at Geneva on November 10, 1972, on October 23, 1978, and on March 19, 1991 (UPOV), Article 37 (3):
"No instrument of accession to the Act of 1978 may be deposited after the entry into force of this Convention according to paragraph (1), except that any State that, in conformity with the established practice of the General Assembly of the United Nations, is regarded as a developing country may deposit such an instrument until December31, 1995, and that any other State may deposit such an instrument until December 31, 1993, even if this Convention enters into force before that date."

Table 12: Comparison of UPOV Conventions[184]

		UPOV 1978 ACT	UPOV 1991 ACT
SUBJECT	**Minimum term of protection**	18 years for grapevines and trees 15 years for all other plants	25 years for the grapevines and trees 20 years for all other plants
	Prohibition on dual protection with patent	Yes, for same botanical genus or species	No
	Eligibility Requirements	Novelty, distinctness, uniformity and stability	Novelty, distinctness, uniformity and stability
	Minimum scope of coverage	Increasing number of genera or species required to be protected from five at time of accession to 24 eight years later	Increasing number of genera or species required to be protected from 15 at time of accession to all genera and species 10 years later (5 years for member states of earlier UPOV Act)

[121] From this table above, the major differences between these Acts include:

- The minimum term of protection for all plants was less under the 1978 UPOV Act, 15 years, compared to 20 years under 1991 Act.
- The 1978 Act also prohibits dual protection with the patent for the same botanical genus or species.
- The minimum scope of coverage is different. For the 1978 Act at the time of accession, five genera or species is required to be protected and twenty-four eight years later. The

[184] This table has been partially sourced from: Helfer, L., 2004. Intellectual Property Rights in Plant Varieties. FAO Legislative Study. [online] FAO Legal Office, Section 2.2.4 <http://www.fao.org/3/y5714e/y5714e04.htm#TopOfPage > accessed 22 March 2021

1991 Act mandates for 15 instead to be protected at the time of accession and from this date, 10 years later all species and genera must be protected.

- With regard to similarities, they both have the same eligibility requirements for plant breeder's rights, that being novelty, distinctness, uniformity and stability.

II. The Nagoya Protocol

4.4.5 INTRODUCTION TO THE NAGOYA PROTOCOL

[122] The Nagoya Protocol was adopted in 2010 as a supplementary agreement to the Convention on Biological Diversity (CBD). The CBD is the international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that has been ratified by 196 nations. Its overall objective is to encourage actions, which will lead to a sustainable future.[185]

[123] Barbados has been a party to the CBD through ratification since 1994. One must recall that the process of ratification may come after parliamentary approval to incorporate an international treaty. Therefore, one may assume that the CBD has been incorporated into Barbados' national law. Despite Barbados being a party to the CBD, they are still not a party to the Nagoya Protocol.

[124] The *Working Paper on Plant Variety Protection*[186] states that the CBD provides a model that may be applied in the context of sui generis legislation covering farmers' plant varieties. However, there were obstacles faced in the implementation of the CBD's principles in the two decades following its adoption. In order to provide greater legal certainty and transparency, the Nagoya Protocol was later adopted by the CBD in 2010.

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[185] UN, 'Convention on Biological Diversity' <https://www.un.org/en/observances/biological-diversity-day/convention > accessed 12 June 2021

[186] Carlos M. Correa, 'Plant Variety Protection in Developing Countries' (2015) Association for Plant Breeding for the Benefit of Society and its member organizations Berne Declaration, The Development Fund, SEARICE and Third World Network <http://www.iisd.org/toolkits/sustainability-toolkit-for tradenegotiators/wpcontent/uploads/2016/06/ToolEnglishcompleteDez15.pdf > pgs. 18-19

The Nagoya Protocol is a supplementary agreement to the CBD. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.[187] The following states in the Caribbean region are parties to the Nagoya Protocol

Box 1:

Parties to the Nagoya Protocol in the Caribbean Region:

Antigua and Barbuda- Became a party in 2017 through ratification
Dominican Republic- Became a party in 2015 through ratification
Saint Kitts and Nevis- Became a party in 2018 through accession
Guyana- Became a party in 2014 through accession

[125] The Protocol clarifies obligations in relation to genetic resources as well as the 'derivatives' resulting from the genetic expression of biological resources. A framework is established under this Protocol that helps researchers access genetic resources in return for a share of any benefits from their use. Indigenous and local communities may receive benefits through this framework that respect the value of traditional knowledge associated with genetic resources.

4.4.6 THE ARTICLES OF THE NAGOYA PROTOCOL

[126] The table below will summarize key Articles of the Nagoya Protocol, that will be important if a State wishes to become a Party.

[187] CBD. 'About the Nagoya Protocol' < https://www.cbd.int/abs/about/ > accessed 12 June 2021

Table 13 Summary of Nagoya Protocol Provisions

		SUMMARY OF THE ARTICLE	COMMENTS
ARTICLE	1[188]	Introduces the Objective of the Protocol. In sum, it is the fair and equitable sharing of the benefits arising from the utilization of genetic resources.	This will thereby contribute to the conservation of biological diversity and the sustainable use of its components.
	2[189]	Defines important terms used throughout the Protocol. One of these key definitions is the term "utilization of genetic resources". This is defined as means to conduct research and development on the genetic and/or biochemical composition of genetic resources.	

[188] Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (adopted 29 October 2010, entered into force 12 October 2014) (CBDUN) Annex < https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf > Accessed 22nd March 2021. Article 1:
"The objective of this Protocol is the fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components."

[189] Ibid at 189. Article 2 (c):
"*Utilization of genetic resources" means to conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology as defined in Article 2 of the Convention."*

	4[190]	Addresses the relationship with international agreements and instruments. Notably Paragraph 3 states that this Protocol is implemented in a mutually supportive manner with other international instruments relative to it.	If a States wishes to be a party to both UPOV and the Nagoya Protocol, the relationship will be mutually supportive, so long as they do not run counter to the objectives highlighted in each agreement.
	5[191]	Reinforces the need for Fair and Equitable Benefit-sharing, by ensuring that benefits arising from the utilization of genetic resources are shared in a fair and equitable way with the local communities concerned.	If a State wishes to include local farmers, as an example, in the benefits arising from use of genetic resources this Article will ensure that it is done in a fair and equitable manner. This will recognize local communities as legitimate stake holders.
	23[192]	This Article highlights that Parties must promote and encourage access to technology and transfer of technology to developing states and small island	If a Small Island State, like Barbados, became a Party to this Protocol they will benefit through the development of their scientific research via technology transfer.

[190] Ibid, at 189. Article 4 (3):
"This Protocol shall be implemented in a mutually supportive manner with other international instruments relevant to this Protocol. Due regard should be paid to useful and relevant ongoing work or practices under such international instruments and relevant international organizations, provided that they are supportive of and do not run counter to the objectives of the Convention and this Protocol."

[191] Ibid, at 189. Article 5 (1):
"*In accordance with Article 15, paragraphs 3 and 7 of the Convention, benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the Party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources in accordance with the Convention. Such sharing shall be upon mutually agreed terms."*

[192] Ibid, at 189. Article 23:
"*In accordance with Articles 15, 16, 18 and 19 of the Convention, the Parties shall collaborate and cooperate in technical and scientific research and development programmes, including biotechnological research activities, as a means to achieve the objective of this Protocol. The Parties undertake to promote and encourage access to technology by, and transfer of technology to, developing country Parties,*
in particular the least developed countries and small island developing States among them, and Parties with economies in transition, in order to enable the development and strengthening of a sound and viable technological and scientific base for the attainment of the objectives of the Convention and this Protocol. Where possible and appropriate such collaborative activities shall take place in and with a Party or the Parties providing genetic resources that is the country or are the countries of origin of such resources or a Party or Parties that have acquired the genetic resources in accordance with the Convention."

		developing states, to encourage development.	
	Annex	The Annex lists the benefits of joining the Protocol such as: • This includes joint ownership of relevant IPR, • contributions to the local economy, • access to scientific information and sustainable use of biological diversity and collaboration, cooperation and contribution in education and training	If Barbados became a Party to the Nagoya Protocol, they would benefit greatly in the area of biodiversity and genetic resources. Furthermore, the joint ownership of IPR and contributions to the economy will in turn promote trade within Barbados contributing directly to their development.

4.4.7 CONCLUDING REMARKS ON THE NAGOYA PROTOCOL

[127] The Nagoya Protocol is seen as a response to criticisms facing UPOV. UPOV's genetic uniformity criterion for plant variety protection may result in the deliberate loss of genetic diversity. [193] UPOV enforces private IPR on plant varieties despite the principle of national sovereignty over biodiversity and the collective rights of communities. The Nagoya Protocol therefore has the potential to protect biological diversity within a State and give recognition to local communities and farmers. This Protocol identifies indigenous and local communities as legitimate right-holders.

[128] If Barbados wishes to establish their medicinal cannabis industry with the inclusion of the local farmers, the Nagoya Protocol will ensure that they are recognized as legitimate interest holders within this industry and the agricultural sector as a whole. This will allow the medicinal cannabis industry to be unique within Barbados as biological diversity will be preserved and local farmers will still play a role in the cannabis industry rather than becoming solely a part of the private sector for foreign investors.

[193] GRAIN, 'Ten Reasons Not to join UPOV' (15 May 1998) < https://grain.org/fr/article/entries/1-ten-reasons-not-to-join-upov > accessed 6 April 2021

4.5 SUMMARY:

- This Chapter has discussed the multilateral nature of IPRs
- The two IOs that deal with IPR matters were introduced, WIPO and the WTO
- The primary international conventions and treaties were examined in detail, focusing on both the ones Barbados is a Party to and the ones they are not yet a Party to
- Under the agreements that Barbados is not yet a party to, the UPOV Convention and Nagoya Protocol were examined
- UPOV was introduced through case studies highlighting the benefits states saw after introducing a PVP system under UPOV. Ultimately, these states observed an increase in generated economic revenue and foreign investment after the sui generis UPOV system was adopted. Should Barbados accede to UPOV, these benefits observed may become applicable to Barbados' medicinal cannabis industry, thereby encouraging the promotion of trade and investment for Barbados' economy
- The Nagoya Protocol was also examined. The overall role of the Nagoya Protocol is to ensure the fair and equitable sharing of benefits arising from the utilization of genetic resources. For the Barbadian medicinal cannabis industry, the Nagoya Protocol will ensure that any utilization of medicinal cannabis genetic resources is done fairly and equitably, balancing the benefits of the investors against the local communities in Barbados
- The Nagoya Protocol also recognizes local farmers as legitimate stake holders. Should Barbados wish to develop their medicinal cannabis industry with the inclusion of local farmers, this Protocol will ensure that they are recognized as stakeholders
- In sum, both UPOV and the Nagoya Protocol will have the potential to strengthen Barbados' IPR regime for the medicinal cannabis industry
- By acceding to these international agreements, Barbados has the possibility to attract trade and investment within their medicinal cannabis industry as potential investors will be safeguarded by the extensive obligations under both agreements

CHAPTER 5: INTELLECTUAL PROPERTY RIGHTS PROTECTION IN MODEL INDUSTRIES

- ***Section 5.1*** *will introduce the United States' legislative approach to IPRs in the medicinal cannabis industry. Colorado will be specifically examined.*
- ***Section 5.2*** *will examine Canada's legislative approach to IP protection in the medicinal cannabis industry.*
- ***Section 5.3*** *will examine Columbia's legislative approach to IPRs in the medicinal cannabis industry.*
- ***Section 5.4*** *will assess which model is best for Barbados to follow.*

[129] This chapter will examine the IPR framework for model medicinal cannabis industries. This will include the United States, Canada, and Colombia. These countries were selected to demonstrate the profitability of the medicinal cannabis industry within a well-established IPR framework. As an example, the US legal cannabis industry was estimated to be worth $13.6 billion in 2019 with 340,000 jobs created for the handling of plants.[194] Wyse and Luria state that IPRs in this industry incentivize, accelerate and reward progress.[195] Thus, a well-established IPR framework is a key to progression in the medicinal cannabis industry. This examination of model industries will be useful for Barbados to understand how other industries are operating with the use of IPR for medicinal cannabis.

[194] Deborah D'Souza 'The Future of the Marijuana Industry in America' (Investopedia 2021) < https://www.investopedia.com/articles/investing/111015/future-marijuana-industry-america.asp > accessed 28 May 2021

[195] Joseph Wyse, Gilad Luria, 'Trends in Intellectual Property Rights Protection for Medicinal Cannabis and Related Products' (2021) Journal of Cannabis Research < https://doi.org/10.1186/s42238-020-00057-7 > accessed 22 March 2021. 3

5.1 THE UNITED STATES OF AMERICA- COLORADO

[130] Under the Federal Controlled Substances Act[196], cannabis is classified as a Schedule I controlled substance and is illegal under federal law. While cannabis remains illegal at the federal level within the United States, investors may still seek protection for cannabis-related inventions at the State level where medicinal and recreational uses have been legalized. Such is the case in Colorado, where the cannabis industry has developed at an exponential rate.

[131] Amendment 20 (2000) and Amendment 64 (2012) revised the Constitution of the State of Colorado legalizing the medicinal and recreational use of cannabis within the State. Colorado was one of the first States to establish and implement a framework for possession, growing, processing and retailing cannabis and cannabis-related products. This step toward legalization has significantly benefitted Colorado's economy through the expansion of markets, and the adoption of a new industry. The Denver Post reports that even amidst the COVID-19 pandemic, Colorado recorded an estimated USD $2.2 billion in sales.[197] For 2020, the Colorado Department of Revenue reported License and Application Fees totaling USD 11.5 million and Cannabis Taxes totaling USD 375.8 million.

[132] The IPR protection landscape within Colorado is premised on utility, plant patents, and trademarks at the State level. Colorado's legacy is built on trademark varieties such as Sour Diesel, and Blue Dream. The United States Patent and Trademark Office (USPTO) is responsible for issuing trademarks, patents and plant variety protection for those investors who wish to benefit from this industry. The table below shows the trends for patents issued by USPTO between 2015 and 2019.

[196] Federal Controlled Substances Act, 21 U.S.C. Sections 801 - 812

[197] Tiney Ricciardi and Noelle Phillips, 'Colorado marijuana sales hit $2.2 billion in highest-selling year yet' (Denver Post, 9 February, 2021)< https://www.denverpost.com/2021/02/09/colorado-cannabis-2020-record-sales-year-2-billion/> accessed 22 March 2021

Table 14: Summary of Patents Issued by USPTO

Year	Utility Patent Grants	Design Patent Grants	Plant Patent Grants	Reissue Patent Grants
2019	354,430	34,794	1,275	604
2018	307,759	30,497	1,208	528
2017	318,828	30,870	1,311	394
2016	303,049	28,873	1,235	426
2015	298,408	25,986	1,074	512

Table adapted from U.S. Patent Statistics Chart
Accessible: https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm

[133] This table demonstrates, a steady increase in patent grants from 2015 to 2019. This steady increase may indicate that investors are becoming more interested in monopolizing the new medicinal cannabis industry. This increase in patent grants will ultimately lead to the generation of economic revenue as IPRs have the potential to promote trade and foreign investment.

5.1.1 PATENTS

[134] According to United States Patent and Trademark Office (USPTO) three types of patents can be granted over an invention – utility, plant, and design. A patent grants the exclusive right of exclusion prohibiting the manufacturing, use or retailing of the product unless permission has been granted by the owner. Utility patents protect the functional or useful aspects of an invention such as a process, a device or equipment or composition of matter,[198] while a design patent protects the aesthetic qualities of the invention. Finally, the plant patent protects asexually reproduced plant varieties. The USPTO defines asexually reproduced plants as "those that are reproduced by means other than from seeds, such as by the rooting of cuttings, by layering, budding, grafting, inarching, etc." [199]

[135] According to 35 U.S.C. 101 – 105, a utility patent protects technology for example the way an invention is used and works, while a design patent protects the aesthetics of the invention

[198] USPTO, 'Patent FAQs' <https://www.uspto.gov/help/patent-help#type-getting-started_1902> accessed 22 March 2021
[199] USPTO, 'Patent FAQs' <https://www.uspto.gov/help/patent-help#type-getting-started_1902> accessed 22 March 2021

as outlined by 35 U.S.C. 171. Additionally, utility or plant patents are subject to either a 17-year term from grant or the 20-year term from the earliest filing date, whichever may be longer, while design patents are granted for 14 years from the patent grant date.[200] The USPTO also confirms that qualifying for patentability requires that the claimed invention be new, non-obvious, and useful.

[136] While still illegal at the federal level, the USPTO has granted patents for novel inventions either by way of utility patents or plant patents. The first utility patent for cannabis was granted by the USPTO in 2015 to Biotech Institute LLC, [201] a group of California breeders.

5.1.2 PROTECTION OF PLANTS – PLANT PATENTS AND PLANT BREEDERS' RIGHTS

[137] Patent protection for plant varieties is unique to the USA, where the reservation under Article 35(2) to the 1991 UPOV text provided for such protection, rather than breeder's rights. With respect to plant patents, 35 U.S.C. 161 states that whoever invents or discovers and asexually reproduces any distinct and new variety of plant may obtain a patent subject to the requirements and conditions of this title. Here, the protection is extended to the owners for a distinct and new variety of the plant that expresses characteristics determined by its specific genotype. A successful applicant must be able to prove that the plant has been altered to produce the new variety which is not naturally occurring. Therefore, plant patents may be available for new species of the cannabis plant, like mutations and plant hybrids. Kubby Patent and Licenses, LLC was awarded the first plant patent for a new variety of cannabis called "Ecuadorian Sativa" in 2016.[202] Additionally, Biotech Institute LLC was also granted a plant patent for "Lemon Crush OG".[203]

[200] USPTO, 'Patent FAQs' <https://www.uspto.gov/help/patent-help#type-browse-faqs_1193> accessed 22 March 2021
[201] U.S. Patent No. 9,095,554
[202] U.S. Patent No. PP27,475.
[203] U.S. Plant Patent USPP31535

[138] Moreover, the enactment of the Plant Variety Protection Act 1970 (PVPA) directly addresses another form of plant protection available. Under this Act, protection is granted for the varieties which may be sexually reproduced via seeds or tubers by way of Plant Breeder's Rights.[204] Section 83 PVPA outlines what should be satisfied for a breeder to be granted protection. This form of protection is extended to the plant alone. By comparison, a patent may allow for the protection of both the plant and the reproduction process. While both forms of protection guarantee exclusive rights over the plant, it could be argued that the plant patent provides superior protection as a result of wider coverage of the subject matter.

5.1.3 TRADEMARKS

[139] Registration of trademarks directly related to the physical use of cannabis is prohibited under federal law. The Re Morgan Brown judgement confirms the UPSTO stance on Trademarks. In this case, the mark "HERBAL ACCESS" was proposed to be used in retail stores, however, this was denied.[205] These marks, when attached to goods or services are illegal under federal law. However, trademark protection is available at the state level, specifically in States where cannabis has been legalized, like Colorado and Washington. Alternatively, the TRIPS Agreement provides an option where an investor can obtain the Trademark in a member country where cannabis is legal and then apply in the US. This loophole provides protection as the application cannot be denied as outlined in the obligations of the TRIPS Agreement.[206]

[140] Legislation applicable to federal registration of trademarks is governed by the Trademark Act (1946), 15 U.S.C. 1051 and the Trademark Rules of Practice, 37 C.F.R. Part 2. Colorado Revised Statutes, Title 7 Article 70 outlines relevant definitions and statement of trademark requirements for registration. According to section 104, the mark is valid for a duration of 5 years from the date of filing by the Secretary of State and is renewable for a successive five years. Finally, Article 70-103 does not confer the right to use the phrase

[204] Plant Variety Protection Act 1970, section 42
[205] Re Morgan Brown, 119 USPQ2d 1350 (T.T.A.B. 2016)
[206] Jeremy De Beer and Alyssa Gaffen, Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity? U.B.C. Law Review, (2017), 50(3), 621-656

registered in the United States patent and trademark office on any products. Trademarks can be used to protect the product with respect to the name chosen for the product as seen in the Colorado model.

5.2 CANADA

[141] Canada is one of the few countries globally that has legalized recreational and medicinal cannabis. The Federal Cannabis Act 2018 (FCA) governs all cannabis-related activity within the country. Similarly, to the US, each province develops regulations regarding the retail sector, while the issuance of patents and trademarks are handled at the federal level.[207]

[142] Liu and Tseng compared the number of patents issued between Canada and the US for the period of 2014-2018. While the US saw an increasing number of patents between this period, this trend was not common within the Canadian market. In the US market, 127 cannabis-related patents were issued in 2018 reflective of an increase from 84 in 2014.[208] While Canada reported 22 patents in 2018 reflective of an increase of 13 for the same period. [209]

[143] Within the Canadian market, investors seem to favour IPRs available through plant breeders' rights and trademarks. On satisfying the regulatory requirements and obtaining the requisite license, investors are granted IPRs with respect to registered trademarks to differentiate goods and services and therefore gain exclusive ownership of unique plant varieties.[210]

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[207] Jeremy De Beer and Alyssa Gaffen, Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity? U.B.C. Law Review, (2017), 50(3), 621-656

[208] Lei Liu and Alice Tseng, 'Cannabis Patents 101: Protecting innovation and growth' (IP Update, 17 April 2019) <https://www.smartbiggar.ca/insights/publication/cannabis-patents-101-protecting-innovation-and-growth> accessed 20 April 2021

[209] Ibid, at 209

[210] Kwan T. Loh and Graham Hood, 'Don't let your brand go to pot (Part II): how cannabis brand owners can cover their "buds" with plant breeders' rights,' (Smart & Biggar, 5 March, 2018) <https://www.smartbiggar.ca/insights/publication/don-t-let-your-brand-go-to-pot-(part-ii)-how-cannabis-brand-owners-can-cover-their-buds-with-plant-breeders-rights> accessed 7 April 2021

5.2.1 PLANT BREEDERS' RIGHTS

[144] Under the Plant Breeders Rights Act 1990 (PBRA) section 7(1), a plant breeder may apply to the Commissioner for protection of a "new plant variety". According to sections 5[211] and 6 of the PBRA, the owner of the plant variety has exclusive rights for protection of the plant for a period of 20 or 25 years, subject to the category. The PBRA also allows for international applicability. This means, that if a breeder has obtained or applied for the protection of the plant variety in another country, then the name used in Canada may be used to identify and protect that plant variety.[212]

[145] The Canadian Food Inspection Agency (CFIA) confirms the use of one name per new variety which extends to its mere presence even if not protected in other Countries outside Canada.[213] To restrict monopolistic behaviour, the CFIA has also prohibited the use of variety names being trademarked in Canada once approved for a plant breeder right.[214] This requirement is applicable even when the plant breeders' rights have expired.[215] This reflects the UPOV regulations and is similar to provisions outlined in the Protection of New Plant Varieties Act, 2001 for Barbados.

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[211] Section 5 of the Plant Breeders' Rights Act 1990:
"5 (1) Subject to the other provisions of this Act and the regulations, the holder of the plant breeder's rights respecting a plant variety has the exclusive right
(a) to produce and reproduce propagating material of the variety;
(b) to condition propagating material of the variety for the purposes of propagating the variety;
(c) to sell propagating material of the variety;
(d) to export or import propagating material of the variety;
(e) to make repeated use of propagating material of the variety to produce commercially another plant variety if the repetition is necessary for that purpose;
(f) in the case of a variety to which ornamental plants belong, if those plants are normally marketed for purposes other than propagation, to use any such plants or parts of those plants as propagating material for the production of ornamental plants or cut flowers;
(g) to stock propagating material of the variety for the purpose of doing any act described in any of paragraphs (a) to (f); and
(h) to authorize, conditionally or unconditionally, the doing of any act described in any of paragraphs (a) to (g)."

[212] Section 14 (4) of the Plant Breeders' Rights Act 1990:
"(4) A denomination that the Commissioner approves for any plant variety in respect of which protection has been granted by, or an application for protection has been submitted to, the appropriate authority in a country of the Union or an agreement country must, subject to subsections (2), (3) and (5), be the same as the denomination with reference to which that protection has been granted or that application submitted."

[213] Canadian Food Inspection Agency, 'Variety Naming Guidelines' <https://inspection.canada.ca/plant-varieties/plant-breeders-rights/application-process/guidelines/eng/1370348536159/1370348613612> accessed 5 April 2021

[214] Section 10 of the Trademark Act 1985
" If any sign or combination of signs has by ordinary and bona fide commercial usage become recognized in Canada as designating the kind, quality, quantity, destination, value, place of origin or date of production of any goods or services, no person shall adopt it as a trademark in association with the goods or services or others of the same general class or use it in a way likely to mislead, nor shall any person so adopt or so use any sign or combination of signs so nearly resembling that sign or combination as to be likely to be mistaken for it."

[215] Ibid, at 215

5.2.2 TRADEMARKS

[146] The Trademarks Act 1985, section 12 outlines the requirements for registrable marks in Canada. Among other things, the application must include a description, in "ordinary commercial terms", of the goods or services to which the application refers. In addition to the restriction on naming conventions in section (10) of the Trademarks Act, the FCA prohibits the use of names that are "likely to create an erroneous impression" about the product. The trademarking of offensive names is prohibited by section 9(1) of the Trademarks Act. This position is the opposite of the US, where such restriction violates the right of freedom of expression.[216]Within the Canadian market, an investor who opts to register a Trademark for protection must remain aware of the potential threat surrounding the mark becoming a generic name as this could jeopardize the protection granted.

5.2.3 PATENTS

[147] Canada and the United States both protect cannabis inventions for (i) methods of cultivation and extraction, (ii) genetically modified plant cells or plants and (iii) therapeutic/medicinal uses of products. Section 2 of the 1985 Patent Act outlines the requirements which need to be satisfied. These requirements include that the invention must be new, inventive, and useful. However, one difference between the US and Canada is that plants are not patentable under Canadian legislation, similar to Barbados. Canadian law does not provide for the patentability of "higher life forms" like plants or animals. However, the cells of a higher life form and methods to produce higher life forms are considered patentable and can be granted protection.[217] Where a breeder creates a new variety, the cells must be identifiable using the specific characteristics of the plant (e.g., genetic modification). If this cannot be relied upon, a patent may not be the best suited IPR, rather an investor should consider protection under Plant Breeder's Rights.

[216] Jeremy De Beer and Alyssa Gaffen, Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity? U.B.C. Law Review, (2017), 50(3), 621-656
[217] Jeremy De Beer and Alyssa Gaffen, Intellectual Property Rights in the Recreational Cannabis Market: Craft or Commodity? U.B.C. Law Review, (2017), 50(3), 621-656

5.3 COLOMBIA

[148] The regulatory approach for the medicinal cannabis industry adopted by Colombia appears to favour the development of the pharmaceutical industry, by implementing a framework that encourages scientific development.[218] Additionally, the country has benefited from its geographical position. The availability of vast land for growing, coupled with low production costs, makes Colombia a prime location for investment. Although, cannabis has been decriminalized to some extent, the drug is still illegal for recreational use in Colombia.

[149] In July 2016 Colombia approved Law 1787, which created a regulatory framework to facilitate trade in the medicinal and scientific use of cannabis and cannabis derivatives. This was followed by the enactment of Decree 613 of 2017, which established guidelines to support Law 1787. These guidelines included requirements for the awarding of licenses and definitions for psychoactive and non-psychoactive cannabis within the market. Regulations governing the production and manufacture of cannabis by-products are administered by Resolution 2892 of 2017. The Colombian government has made a series of legislative enactments and amendments to support this industry – seen in the figure below.[219]

[218] Nicolás Martínez Rivera, 'The Challenges of Medicinal Cannabis in Colombia, A look at small - and medium - scale growers', (Transnational Institute, 2019)
[219] Ibid, at 219

Figure 5: Legislative Enactments in Colombia

Law	Description
Law 1787 of 2016	Creates a regulatory framework that permits safe and informed access to cannabis and its by-products for medical and scientific uses in Colombia
Decree 613 of 2017	Regulates Law 1787 of 2016, introduces definitions and conditions for obtaining licences
Decree 631 of 2018	Introduces modifications and instructions concerning the source of seeds
Resolution 577 of 2017	Establishes technical regulations governing the assessment and monitoring of licences for the use of seeds for planting and for growing psychoactive and nonpsychoactive cannabis plants
Resolution 578 of 2017	Establishes the tariff schedule for the assessment and monitoring services that must be paid for by individuals and companies applying for licences
Resolution 579 of 2017	Establishes criteria for defining small- and medium-scale growers, producers and traders of medicinal cannabis in Colombia
Resolution 2891 of 2017	Establishes the tariff schedule for assessment, monitoring and control services applicable to licences to manufacture cannabis by-products for medical and scientific uses
Resolution 2892 of 2017	Establishes technical regulations governing the award of licences for the production and manufacture of cannabis by-products

Table adapted from Drug Policy Briefing, 52, Septemeber 2019
Accessible: https://www.tni.org/files/publication-downloads/policybrief_52_eng_web.pdf

[150] Licenses granted in Colombia regulate: (i) the possession of seeds for planting cannabis plants; (ii) the growing/cultivation of cannabis plants; (iii) the production and manufacture of cannabis derivatives and (iv) export licenses for cannabis derivatives. Conditions are further outlined in Qualification II Decree 2467. Since the law entered into force in 2016, Colombia has reported an excess of 300 licenses issued. This is shown in Table 15 below. [220] Moreover, reports from 2020 suggest that approximately 153 companies have been granted processing licenses for cannabis derivatives.[221]

[220] Ibid, at 219
[221] Efrain Valencia, 'Analysis of the Regulation of Medicinal Cannabis in Scheme Associates of Small and Medium Cultivators in Colombia', (Colombia Cooperative University Cali Headquarters, 2020) <https://repository.ucc.edu.co/bitstream/20.500.12494/18234/1/2020-Valencia-regulacion_canabbis_cultivadores.pdf> accessed 8 April 2021

Table 15: Summary of Cannabis Licenses Issues in Colombia[222]

	TYPE OF LICENSE	NUMBER OF LICENSES ISSUED SINCE APPROVAL OF DECREE 613 (AS OF 4 JUNE 2019)
LICENSE	Use of seeds for plating	35.
	Cultivation of psychoactive cannabis	83
	Cultivation of non-psychoactive cannabis	129
	Manufacture of by-products	97
	Total issued: 344	

[151] This table demonstrates a substantially high number of licenses issued in Colombia since Decree 613 had been established, particularly in the type of license issued for the cultivation of non-psychoactive cannabis.

[222] Table adapted from Drug Policy Briefing, (52, September 2019)
< https://www.tni.org/files/publication-downloads/policybrief_52_eng_web.pdf >

[152] Chapter 10 of Decree 613 also protects the interest of the small and medium-scale farmers in the Colombian market. The legislation requires persons operating on a large scale, under a license, to manufacture cannabis by-products to source a minimum of 10 percent of the crop from small or medium-scale farmers who have the requisite license to cultivate cannabis. This approach gives small farmers an opportunity to benefit from the profitability of the medicinal cannabis industry without requiring them to obtain a licence to manufacture by-products or links which is a compulsory requirement for activities involving cultivation.[223]

5.3.1 PATENTS

[153] Decision 486 (2000) outlines the framework for IP across The Andean Community which includes Colombia. Although this is a separate instrument, member States of the World Trade Organization (WTO) and the Paris Convention are provided the status of most favoured nation and are afforded no less favourable treatment than members of the Andean Community. IPRs covered under the Decision include trademarks, patents, utility model or industrial design within member states of the Andean Community or international authority pursuant the Paris Convention.

[154] Chapter I outlines patentability requirements, with section 15 specifically providing guidance on what is not classified as an invention under the law. Patent protection is granted for 20 years from the application date of the respective member state. Plants or parts of plants are not deemed to be inventions. Therefore, the cannabis plant and its parts are not patentable in Colombia. However, extracts taken from the plant comprising of chemical compounds may be formally documented and patented. Seeds are also not patentable, but protection is available by way of plant breeders' rights.

[223] Ibid, at 219

5.3.2 TRADEMARKS

[155] Decision 486 also recognizes the protection signs that are capable of distinguishing products or services. A certification mark is a sign associated with a specific product or service used by others whose specified characteristics have been certified by the legal owner of the mark. Trademarks are awarded for a period of 10 years from the date registration is granted and are renewable.

5.3.3 PLANT BREEDER'S RIGHTS

[156] While the patentability of plants and parts of plants are prohibited in Colombia, Decision 345 of the Andean Community of 1993 provides for protection via plant breeders' rights. Here, rights were enforced in national legislation by the enactment of Decree 533 of 1994 presently known as Decree 2687. Decision 345 is a sui generis regime providing plant breeders' protection in line with UPOV 1991 Convention.

The Colombian Agricultural and Livestock Institute (ICA), grants a breeder's certificate pursuant to Decree 2687 and guarantees the exclusive exploitation of the plants for a maximum period of 20 to 25 years. One limitation of this Colombia Model is small farmers may not be able to afford the initial investment to gain entry or benefit from establishing operations the industry.[224]

5.4 WHICH MODEL IS BEST FOR BARBADOS TO FOLLOW?

[157] When assessing which model is best for Barbados to follow, two important considerations must be taken into account. Firstly, recreational cannabis is not legal in Barbados. As mentioned above, some states in in the US have legalised both medicinal and recreational cannabis and Canada is one of the first countries to legalise both recreational and medicinal cannabis. Secondly, the IPR structure surrounding the protection of the cannabis industry, more specifically the cannabis plant, in these models differs.

[224] Ibid, at 219

[158] These factors must be considered when assessing the emulation of these strategies in Barbados, as factors present in Barbados may hinder the replication of success from the US Canada, and Colombia. For example, the US is the only jurisdiction that allows for the patent of asexually reproduced plants. Implementing this into Barbados' current patent legislation would still potentially lead to difficulties. A separate line of legislation would likely have to be created, to deal with plant patents for asexually reproduced plants.

[159] Overall, this chapter has proven that the presence of a robust IP framework, that builds on the jurisdictions' unique attributes, is the crux of attracting investors. This is seen in Colombia's approach, which is centred around their goal of developing the pharmaceutical industry via the promotion of scientific development. Therefore, Colombia's cannabis industry is arguably the best model for Barbados to follow. Barbados possesses the ability to also develop a medicinal cannabis industry built around the promotion of scientific development. This is due to the presence of highly skilled and trained experts in the fields of plant propagation, using medicinal plants to treat communicable and non-communicable diseases and other areas of seminal research, largely found at the University of the West Indies, Cave Hill. Synergies were recently strengthened via the signing of a memorandum of understanding between BMCLA and UWI.[225] In addition, the inclusion of protecting the interests of small farmers in Colombia, stemming from Chapter 10 of Decree 613, supports the recommendations provided in chapter 6. Adopting an IP structure following Colombia's approach, which focuses on building out the medicinal cannabis pharmaceutical industry, may facilitate the expansion of Barbados' industry into a niche segment of the global market.

5.5 SUMMARY

- Notwithstanding the challenges across models, the overarching aim of strategies adopted by the US, Canada and Colombia is to provide protection through IPRs, to encourage the

[225] Barbados Advocate, 'The UWI, Cannabis Licensing Authority Join Forces,' (Barbados Advocate Online, 5 May, 2021) < https://www.barbadosadvocate.com/news/uwi-cannabis-licensing-authority-join-forces> accessed 10 June 2021

promotion of foreign direct investment and trade within their respective countries through medicinal cannabis. To fully appreciate the success of these Models, the functioning of the regime as a whole cannot be ignored

- Arguably, the success of the models examined has been propelled by a combination of several factors including IPRs. Though the extent of protection provided by the individual regimes differs, the protection of asexually reproduced plants via patents only being available in America. Factors like the full legalization of cannabis as seen in Canada, legalization of recreational use in States across the US like Colorado, and the advantage of geographical location as seen in Colombia also have influenced the results found in these jurisdiction
- This chapter has shown that it is important to provide for an internationally recognized and robust IP regime where investors have varying opportunities for protection
- Securing IP rights is critical for the investor who wishes to protect their business and remain competitive in this thriving global market. To this end, States must ensure the availability of laws to secure IPRs to attract both investment and trade through a strengthened IP framework at both the international and domestic levels
- Chapter 6 will now examine suggestions that Barbados may consider for their specific medicinal cannabis industry, that will aid in the development of their IPR regime

CHAPTER 6: STRATEGIC RECOMMENDATIONS FOR THE PROTECTION OF CANNABIS STRAINS IN BARBADOS

- ***Section 6.1*** *briefly introduces important considerations and influences on the proposed recommendations.*
- ***Section 6.2*** *outlines two amendments that may be made to expand PVR protection in Barbados to cannabis strains.*
- ***Section 6.3*** *analyses the potential benefits and issues that may arise from joining UPOV.*
- ***Section 6.4*** *proposes accession to the Nagoya Protocol, in addition to accession to UPOV, so as to bolster benefits accruing to both key stakeholders.*
- ***Section 6.5*** *outlines the eligibility criteria for becoming a contracting party to the UPOV Convention.*

6.1 INTRODUCTION

[160] Under Barbados' current IPR regime, cannabis varieties strains cannot be protected. This chapter will therefore propose recommendations for protecting medicinal cannabis in Barbados. This will be crucial, as this may ultimately promote investment and trade for the Barbadian medicinal cannabis industry, through a well-established IPR regime.

The scope of this protection will be directly influenced and shaped by the international agreements to which Barbados is currently a signatory to and those that Barbados may choose to join later. These recommendations have been proposed following the consideration of factors including:

- benefits that may flow to foreign investors and local farmers; two major stakeholders in the Barbadian medicinal cannabis industry
- detriments that may be suffered by foreign investors and local farmers
- ensuring that Barbados is fulfilling its current international obligations

6.2 RECOMMENDATIONS FOR THE AMENDMENT OF THE CURRENT PVR ACT

[161] The current obstacle for extending PVR protection to cannabis strains in Barbados is the closed list of eligible genera and species. As discussed in Chapter 3, the list provided in the Barbados Protection of New Plant Varieties Order[226] does not currently include cannabis. There are two amendments that may allow for PVR protection of cannabis strains: (i) expansion of the current list to include cannabis; or (ii) elimination of the list altogether. If the list is expanded to include cannabis, then Barbados' legislation will conform with UPOV 1991's requirements, for a period of ten years. After this period of 10 years, the list would have to be eliminated.

[162] Article 3(2) of the 1991 Act of the UPOV Convention [227] states that a new member of the Union must provide protection to at least 15 plant genera or species, initially. After ten years, they must provide protection for all plant genera and species. Barbados' list of genera and species in the Protection of New Plant Varieties Order covers 45 genera and species. This list ultimately decides which genera or species may qualify for plant breeder's rights.[228] Barbados is therefore in conformity with the 1991 Act of the UPOV Convention, specifically Article 3(2) (i), by extending protection to more than 15 genera or species. However as required by Article 3 (2) (ii) Barbados will have a period of 10 years, after acceding to UPOV, to extend protection for all genera and species to continue to be in conformity with their obligations under UPOV.

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[226] The Barbados Protection of New Plant Varieties Order, 2001

[227] International Convention for the Protection of New Varieties of Plants of December 2, 1961, as Revised at Geneva on November 10, 1972, on October 23, 1978, and on March 19, 1991 (UPOV), Article 3 (2):
"(*i) at the date on which it becomes bound by this Convention, to at least 15 plant genera or species and, (ii) at the latest by the expiration of a period of 10 years from the said date, to all plant genera and species."*

[228] Protection of New Plant Varieties Act (2002), s5 (2):
"In compiling the list of genera or species under subsection (1), the Minister may exclude varieties of a genus or species which are not characterized by a particular manner of reproduction or multiplication or by a certain end-use."

[163] Eliminating this list will also be beneficial for the medicinal cannabis industry, as plant breeder's rights will now be extended to include protection for the cannabis species. This inclusion may potentially encourage investment and trade in the Barbadian medicinal cannabis industry, through a well-established IPR regime. The following section will now ascertain whether Barbados should in fact become a member of UPOV.

6.3 SHOULD BARBADOS JOIN UPOV?

[164] The first element that may be considered, is whether accession to the UPOV Convention will be beneficial to the Barbadian medicinal cannabis industry. This section will analyse potentially controversial aspects of the UPOV Convention and the effect on stakeholders, whilst also highlighting potential benefits.

6.3.1 BENEFITS OF JOINING UPOV

[165] ***UPOV's encouragement of breeding programs and investments***

An effective PVP system was identified as a key enabler for investment in breeding and development of new varieties of plants.[229] UPOV membership plays an important role by instilling in breeders the confidence to introduce new varieties.[230] UPOV ultimately seeks to provide and promote an effective system of PVP, to encourage the development of new varieties of plants for the benefit of society.[231] UPOV's potential to encourage economic development within states and develop foreign markets for new plant varieties, was seen throughout the case studies in Chapter 4. If Barbados acceded to the 1991 Act of the UPOV Convention, this may increase investor confidence in the medicinal cannabis industry by ensuring an established IPR regime, that will protect potential investors in developing new varieties of cannabis in Barbados. UPOV may also potentially encourage economic development and investment opportunities for Barbados, like the states previously discussed in the case studies.

[229] WIPO Magazine, 'Benefits of New Plant Variety Protection' (WIPO 2010) < https://www.wipo.int/wipo_magazine/en/2010/03/article_0007.html > accessed 13 June 2021
[230] Ibid, at 230
[231] Ibid, at 230

[166] ***UPOV membership expands a state's availability to foreign varieties***

An effective PVP system may remove barriers to trade in foreign plant varieties, thereby increasing domestic and international market scope.[232] As an example, in Canada after implementing the UPOV sui generis system, farmers had increased access to foreign bred varieties.[233] This opportunity to access foreign varieties may help state's facing challenges such as food security. If Barbados implemented UPOV's PVP system, barriers to trade foreign plant varieties may be removed, and Barbados will be capable of developing an international market for plant varieties, like the cannabis plant. This market may potentially generate economic revenue for Barbados and promote trade and investment in the medicinal cannabis industry

[167] UPOV has also simplified the PVP application process for member states. Traditionally, to obtain protection for a new variety, breeders had to file individual applications with the PVP Office of UPOV Members.[234] However, this cumbersome administrative process is now significantly easier with the launch of UPOV PRISMA. This is a multilingual tool that allows breeders to submit PVP applications online. Within the Caribbean region, only Trinidad and Tobago and the Dominican Republic have used UPOV PRISMA.[235] If Barbados became a UPOV member they would be one of the few in the region using this unique tool for online PVP applications.

Furthermore, if Barbados became a member of UPOV, it will be able to use UPOV PRISMA as an online PVP application tool. This may promote investment opportunities in the Barbadian medicinal cannabis industry, as potential breeders can easily file an application while being in conformity with Barbados' formal requirements.

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[232] UPOV, 'UPOV Report on the Impact of Plant Variety Protection' (2005) <https://www.upov.int/export/sites/upov/about/en/pdf/353_upov_report.pdf > accessed 13 June 2021

[233] Agriculture Canada, 'Sharing Canada's Experience Implementing UPOV' (2016) <https://www.upov.int/edocs/mdocs/upov/en/upov_itpgrfa_sym_ge_16/upov_itpgrfa_sym_ge_16_ppt_9.pdf> accessed 13 June 2021

[234] WIPO Magazine, 'UPOV: Supporting Food Security with Plant Variety Protection' (WIPO 2019) < https://www.wipo.int/wipo_magazine/en/2019/01/article_0007.html > accessed 13 June 2021

[235] UPOV, 'UPOV PRISMA' < https://www.upov.int/upovprisma/en/index.html > accessed 13 June 2021

6.3.2 CHALLENGES WITH UPOV

[168] The 1991 Act of the UPOV Convention strengthened the benefits enjoyed by right holders. It has been argued that these benefits have created monopolies that have accorded private ownership over biodiversity, to the detriment of farmers and communities in developing countries.[236]

By extension, this power enjoyed by private breeders can lead to exploitation, such as right holders producing less seed than that being demanded, in an attempt to influence prices and reap more profits.

The following will explore potential challenges with uneven benefits and detriments flowing to breeders and small farmers:

- ***Reduced rights for farmers***

  The UPOV Convention provides members with an option to allow farmers to save seeds for their use.[237] The farmers must also continue to pay royalties for the privilege to use the product of the harvest which they obtained from the original sowing of the seeds. The choice of whether or not to extend this exemption is left to member states, by inserting a special provision in their domestic legislation. Seed saving is a practice that farmers have engaged in for centuries. Without it, farmers are forced to buy seeds every year.

  Section 16 (2)[238] of the Barbados Protection of New Plant Varieties Act extends this discretion to the Minister. The Minister may choose to allow farmers to use seeds that they have bought and harvested again, on their own holdings. This means that they can use the crop, but they are prevented from selling to others.

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[236] Carlos M. Correa, 'Sui Generis Protection for Farmers' Varieties', (Routledge 2016) Page 159 <https://www.bioversityinternational.org/fileadmin/user_upload/online_library/publications/pdfs/Farmers_Crop_Varieties_and_Rights/9.ProtectionForVarieties-Correa.pdf> accessed 20 April 2021

[237] International Convention for the Protection of New Varieties of Plants, 1991, Article 15.2:
"Notwithstanding Article 14, each Contracting Party may, within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety or a variety covered by Article 14(5)(a)(i) or (ii)."

[238] Section 16 (2) of Barbados Protection of New Plant Varieties Act, 2002:
"The Minister may by regulations which protect the legitimate interests of the holders of plant breeders' rights restrict the rights in relation to the varieties of any specified plant genera or species, in order to permit farmers to use, for propagating purposes on their own holdings, the product of the harvest which the farmers have obtained by planting on their own holdings the protected variety or a variety mentioned under section 15(5)(a) or (b)."

- ***Protection flows from the filing date of the application***

  Article 13[239] of the 1991 Act of the UPOV Convention provides back-tracked infringement protection. Where an application has been filed, and an act has been committed which infringes a breeder's right, the applicant is entitled to be renumerated for such infringements once the right is granted. Members must provide for such remuneration measures in its national legislation. This further exemplifies the strength of the plant breeder. This particular provision may also attract investors to Barbados' medicinal cannabis industry, as they will receive protection for their variety as soon as an application is submitted. However, this demonstrates the unbalanced benefits and detriments flowing to investors on one hand and small farmers on the other hand.

- ***Restriction on further breeding with dependent varieties***

  If a variety is not sufficiently different, it will be dependent. A breeder has rights over their variety as well as over dependent varieties. UPOV argues that this extension of the breeder's right discourages persons from attempting to secure protection for varieties with only a small variation in their genes. This addition to the Convention brings the concept of novelty under plant breeder's rights into a similar realm of novelty, as under patent law. The requirement of sufficient difference from what was previously protected expands the concept of novelty in plant breeding protection past that of timelines. Cannabis has only recently been legalized across the world. Those who received the first PVRs over strains may have potentially monopolized the field for 20 years. If subsequent hybrid strains are not sufficiently different, then they are dependent, and the rights associated will belong to the original owner.

- ***Risk to biological diversity***

  Biodiversity is crucial to the sustenance of life, as it supports the functioning of ecosystems. Loss of biological diversity can harm agricultural production and human life

[239] International Convention for the Protection of New Varieties of Plants, 1991, Section 13:
"Each Contracting Party shall provide measures designed to safeguard the interests of the breeder during the period between the filing or the publication of the application for the grant of a breeder's right and the grant of that right. Such measures shall have the effect that the holder of a breeder's right shall at least be entitled to equitable remuneration from any person who, during the said period, has carried out acts which, once the right is granted, require the breeder's authorization as provided in Article 14. A Contracting Party may provide that the said measures shall only take effect in relation to persons whom the breeder has notified of the filing of the application."

by threatening food security and accelerating climate change. UPOV is a potential risk to biological diversity. [240] UPOV's requirement of uniformity and stability may lead to a reduction in gene variation. Breeders recycle the same breeding/propagating materials, which may ultimately lead to a reduction in the use of exotic materials, and a reduction in genetic variation within varieties.[241]

6.4 PROPOSAL TO JOIN THE NAGOYA PROTOCOL AND THE UPOV CONVENTION

6.4.1 NAGOYA PROTOCOL

[169] Joining the Nagoya Protocol may potentially mitigate the concerns local farmers face if Barbados were to join UPOV. As discussed in Chapter 4, the Nagoya Protocol aims to provide fair and equitable benefit-sharing and recognition of local communities. Protecting knowledge in these communities provides for economic opportunities to flow to these local communities as well. The economic opportunities in turn incentivize persons to engage in practices that generate further knowledge. As noted previously, Barbados is not a member to the Nagoya Protocol. However, it is proposed that Barbados joins, to bolster the interests of local farmers. Joining the Nagoya Protocol may guarantee that local farmers are recognized as legitimate stakeholders and benefit beyond the limited exemptions provided by UPOV.

[240] GRAIN, 'Ten Reasons Not to join UPOV' (15 May 1998) < https://grain.org/fr/article/entries/1-ten-reasons-not-to-join-upov > accessed 20 April 2021
[241] Ibid, at 241

6.4.2 ASSESSING THE COMPATIBILITY OF THE NAGOYA PROTOCOL WITH UPOV

[170] Article 4 (3) of the Nagoya Protocol provides that the agreement shall be implemented in a mutually supportive manner with other international instruments of relevance.[242] UPOV was developed before CBD and Nagoya, and as a result, has developed without contemplating benefit sharing.[243] Despite UPOV not contemplating benefit sharing, it has been argued that both UPOV and Nagoya have a similar aim.[244] This aim is to benefit society as a whole by promoting innovation and spurring investment in plant breeding.[245] This common goal of societal benefit recognizes the potential compatibility of the UPOV Convention and the Nagoya Protocol. However, the concept of societal benefit is not identical for both Agreements.[246] UPOV's benefits flow to the right holder (the breeder) and then to society and local farmers, whereas the Nagoya Protocol provides for benefit sharing and focuses on marginal and indigenous communities, which is narrower in scope.[247]This differentiation does not mean that the UPOV Agreement and Nagoya Protocol are incompatible.[248] To the contrary, the Nagoya Protocol helps to bolster benefits enjoyed by marginalized stakeholders, like local farmers, thereby ensuring benefits for both the breeder and local communities.[249]

[171] Barbados has identified potential challenges with implementing the Nagoya Protocol. Barbados has provided the Access and Benefit-Sharing Clearing House under the CBD

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[242] Article 4(3) of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity:
"This Protocol shall be implemented in a mutually supportive manner with other international instruments relevant to this Protocol. Due regard should be paid to useful and relevant ongoing work or practices under such international instruments and relevant international organizations, provided that they are supportive of and do not run counter to the objectives of the Convention and this Protocol."
[243] Comparative Study of the Nagoya Protocol, the Plant Treaty and the UPOV Convention: The Interface of Access and Benefit Sharing and Plant Variety Protection, < https://www.cisdl.org/wp-content/uploads/2019/04/Final-Report-Nagoya-Protocol-Plant-Treaty-and-UPOV.pdf>, accessed on April 23, 2021
[244] Ibid, at 245
[245] Ibid, at 245
[246] Ibid, at 245
[247] Ibid, at 245
[248] Ibid, at 245
[249] Ibid, at 245

with an Interim National Report on the Implementation of the Nagoya Protocol.[250] The report indicated that there is a lack of financial and human resources within Barbados as a Small Island Developing State (SIDS) to fulfil obligations stipulated in the Nagoya Protocol and this was the main challenge for Barbados not becoming a party to the Protocol. It was further indicated that Barbados has no indigenous or local communities. In response to these claims found in the report, one must first note that there are other Small Island Developing States[251] in the Caribbean that are a party to the Nagoya Protocol including Antigua and Barbuda and St. Kitts and Nevis as mentioned in Chapter 4. Furthermore, Barbados arguably does have local communities that must be considered, that being the local farmers who must be recognized as legitimate stake holders within the medicinal cannabis industry.

[172] Additionally, the UN Environment Programme has established a project to aid in the advancement of the Nagoya Protocol for Countries in the Caribbean region. The overall goal of this project is to support Caribbean countries in the implementation of this Protocol.

The Guide for the Ratification and Accession to the Nagoya Protocol report also seeks to provide solutions for the implementation of the Protocol. Barbados has identified a lack of resources as a key issue. From the Guide for the Ratification and Accession to the Nagoya Protocol report, one solution that can be employed is to organize discussions with key institutions to increase funds for environmental issues through national budgetary allocations. [252]

[250] ABSCH, 'Interim National Report on the implementation of the Nagoya Protocol' (2018) < https://absch.cbd.int/pdf/documents/absNationalReport/ABSCH-NR-BB-239416/1 > accessed 28 April 2021
[251] To see a comprehensive list of SIDS in the Caribbean Region refer to: https://sustainabledevelopment.un.org/topics/sids/list
[252] UN Environment, ' Guide to the Ratification and Accession to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation' <https://wedocs.unep.org/bitstream/handle/20.500.11822/27173/Nagoya_Guide.pdf?sequence=1&isAllowed=y>

6.5 ELIGIBILITY TO BECOME A MEMBER OF UPOV

[173] To bring the above recommendations into fruition, Barbados must satisfy the eligibility procedure for membership to UPOV. Article 30 (1)[253] of the 1991 Act of the UPOV Convention states the requirements for implementing the Convention in a potential member state. This includes:

- Provide for appropriate legal remedies for the effective enforcement of breeders' rights
- Maintain an authority entrusted with the task of granting breeders' rights
- Ensure that the public is informed through the regular publication of information concerning applications for breeders' rights and proposed variety denominations .

[174] A detailed guide for acceding to the 1991 Act of the UPOV Convention will be included as Appendix III of this paper. Notably, Article 37 (1)[254] of the 1991 Act of UPOV states that the Convention shall enter into force one month after the deposit of the instrument of accession. Though one must recall, as Barbados is a dualist state, the 1991 Act will have to be incorporated into domestic law for Barbados to become bound by the UPOV Convention.

6.6 IMPLEMENTATION OF THE NAGOYA PROTOCOL

[175] Key obligations to accede to the Nagoya Protocol may be found in Articles 13 and 14 of the Nagoya Protocol. Article 13 requires each party to designate a national focal point for access and benefit-sharing. Article 14 requires potential parties to make available to ABS Clearing- House:

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[253] International Convention for the Protection of New Varieties of Plants, 1991, Article 30 (1):
"[Measures of implementation] Each Contracting Party shall adopt all measures necessary for the implementation of this Convention; in particular, it shall: (i) provide for appropriate legal remedies for the effective enforcement of breeders' rights; (ii) maintain an authority entrusted with the task of granting breeders' rights or entrust the said task to an authority maintained by another Contracting Party; (iii) ensure that the public is informed through the regular publication of information."

[254] International Convention for the Protection of New Varieties of Plants, 1991, Article 37 (1):
"[Initial entry into force] This Convention shall enter into force one month after five States have deposited their instruments of ratification, acceptance, approval or accession, as the case may be, provided that at least three of the said instruments have been deposited by States party to the Act of 1961/1972 or the Act of 1978."

- Legislative, administrative and policy measures on access and benefit-sharing
- Information on the national focal point and competent national authority or authorities
- Permits or their equivalent issued at the time of access as evidence of the decision to grant prior informed consent and of the establishment of mutually agreed terms

[176] Additionally the CBD website identifies key steps towards the implementation of the Nagoya Protocol in detail. Appendix II of this paper will also include a detailed guide for implementing the Nagoya Protocol in Barbados.

6.7 CONCLUSION: THE PROPOSED WAY FORWARD FOR THE BARBADOS MEDICINAL CANNABIS INDUSTRY.

- This chapter has proposed strategic recommendations that may strengthen the IPR regime for the promotion of the Barbadian medicinal cannabis industry
- A potential challenge Barbados currently faces in their IPR regime, is the exclusion of cannabis from the list of protected species in the Protection of New Plant Varieties Order. This exclusion means, that cannabis plant varieties cannot receive plant breeder's rights
- A secondary recommendation was made to either expand this list in the Protection of New Plant Varieties Order to include cannabis or eliminate the list entirely. Elimination of this list will bring Barbados into full compliance with the 1991 Act of the UPOV Convention
- A recommendation was also made for Barbados to accede to the 1991 Act of the UPOV Convention. The benefits of joining UPOV were considered, as well as potential challenges to assess whether the UPOV Convention may be beneficial for Barbados' IPR regime
- A further recommendation made for the Barbadian medicinal cannabis industry, is for Barbados to accede to the Nagoya Protocol
- The compatibility of the Nagoya Protocol and the 1991 Act of the UPOV Convention was assessed. Ultimately, both agreements may be implemented in a mutually supportive manner
- Challenges for acceding to the Nagoya Protocol were also considered and solutions were proposed

- Lastly, this Chapter briefly examined the implementation requirements for both the 1991 Act of the UPOV Convention and the Nagoya Protocol

[177] In sum, the recommendations made in this chapter may potentially promote investment and trade for the Barbadian medicinal cannabis industry, by ensuring a well-established IPR regime. Barbados also has a unique opportunity to diversify their economy past traditional sand and sea tourism.[255] With the legislation of medicinal cannabis, comes a valuable market opportunity in medicinal tourism for Barbados.[256] Medicinal tourism is the process of travelling outside the country of residence for the purpose of receiving medicinal care.[257] Jamaica has pushed to become a medicinal cannabis tourism destination in the Caribbean region.[258] Jamaica is distinct, as tourist are eligible for permits to buy medicinal cannabis once they have a prescription.[259] Jamaica has also established health and wellness resorts, like Coral Cove. Coral Cove advertises themselves as one of the world's first cannabis health and wellness retreats.[260]

[178] The global medicinal tourism market is significant and is expected to grow exponentially in the coming years owing to trends related to aging, the prevalence of chronic diseases among various age groups as well as rising healthcare costs.[261] This opportunity to diversify Barbados' economy through medicinal cannabis may generate significant economic revenue and ultimately promote not only medicinal tourism, but investment and trade opportunities for Barbados.

[255] Eastern Caribbean Central Bank, 'The Medicinal Cannabis Revolution' (Flagship Report)
[256] Ibid, at 256
[257] Medicinal Life Sciences, 'What is Medicinal Tourism?' (2018) < https://www.news-medicinal.net/health/What-is-Medicinal-Tourism.aspx > accessed 13 June 2021
[258] Cannatek, 'Medicinal Cannabis Tourism Rising' < https://www.88cannatek.com/article/057 > accessed 13 June 2021
[259] Ibid, at 259
[260] Coral Cove Wellness < https://www.coralcovewellness.com > accessed 13 June 2021
[261] Eastern Caribbean Central Bank, 'The Medicinal Cannabis Revolution' (Flagship Report)

CONCLUSION

[179] This memorandum has therefore assessed Barbados' IP regime for the promotion of trade and investment in the medicinal cannabis industry. This assessment was executed through examining both the multilateral IP framework, and Barbados' domestic IP framework.

[180] IPRs play an undeniable role in economic growth for a state. Chapter 1 demonstrated the direct link between IPRs and economic growth. In sum, since the introduction of the 1995 TRIPS Agreement, IPRs have directly affected the economies of states. Statistics within the Caribbean were used to demonstrate the potential economic value of IPRs. Notably in Jamaica, in 2005, US $ 464.7 million was generated through the copyright sector alone.

[181] A direct link between IP and FDI was also demonstrated. It was established, that strong IPRs will affect the volume of FDI particularly in developing states. This promotion of trade and investment, through an effective IPR regime may generate significant economic revenue for Barbados.

[182] The medicinal cannabis industries throughout the Caribbean were also comparatively analysed. Jamaica has been described as the forerunner within CARICOM for the medicinal cannabis industry. The fundamental Acts establishing the medicinal cannabis industry in each state were analysed to demonstrate the advantages of each within specific categories.

[183] Barbados has the potential to develop a novel cannabis variety. This limestone-based island results in calcium-rich soil which can encourage the growth of cannabis plants. Barbados topography is also relatively flat compared to other predominantly hilly islands. These factors may facilitate a local Barbadian cultivar, giving Barbados a niche in the medicinal cannabis industry.

[184] While Barbados has an established national IPR framework for the development of their medicinal cannabis industry, amendments must be made to domestic legislation to encourage this promotion of trade and foreign investment. This includes, amending section 5 of the Barbados Protection of New Plant Varieties Act. This section specifies a list of species that can receive PBR protection. However, this list does not currently include cannabis. This exclusion of cannabis means that currently in Barbados, potential investors cannot receive PBR protection.

[185] Another potential challenge is the discrepancies between the Proceeds and Instrumentalities of Crime Act and the Medicinal Cannabis Act. Cannabis is still classified as a "controlled drug" under the First Schedule of the Drug Abuse (Prevention and Control) Act. This classification means that cannabis falls within the definition of "criminal conduct" in the Proceeds of Crime Act. The conflicting nature of these Acts may deter potential investors as any profits generated within the medicinal cannabis industry, will be treated as proceeds of crime.

[186] Considering the potential benefits for the encouragement of foreign investment and trade in the medicinal cannabis industry as well as the incorporation of local farmers as legitimate stakeholders, Barbados is also advised to become a Party to the 1991 Act of the UPOV Convention and the Nagoya Protocol.

[187] Barbados' IPR framework may be compared to that of Jamaica. Unlike Barbados, Jamaica has not passed legislation to protect PBRs, and cannabis is excluded from protection under their current Patent Act. Additionally, as of February 22nd, 2021, Jamaica has been in contact with the office of UPOV for assistance in the development of their laws to be in conformity with the 1991 UPOV Convention. Barbados has also been in contact.

[188] Similar to Barbados, Jamaica is also not a party to the Nagoya Protocol. This comparison is useful to demonstrate how comprehensive Barbados' national IP framework is for the medicinal cannabis industry. With minor amendments, Barbados can easily conform to

international standards under UPOV 1991 and the Nagoya Protocol. The decision to become a Party to these international Agreements, will signal to potential investors that Barbados has an extensive IPR regime for the medicinal cannabis industry. This, may in turn, promote trade and investment for Barbados, through the increase of foreign investment in the nascent industry, as well as the encouragement of international trade.

[189] The 1991 UPOV Convention and Nagoya Protocol have inherent benefits for the IPR regime of Barbados' medicinal cannabis industry. Becoming a party to these agreements may promote trade and investment for the medicinal cannabis industry in Barbados, as well as potentially bolster the pre-existing IPR protection in the domestic IPR regime. It is our hope that this memorandum will assist in paving the way for Barbados to promote foreign investment and trade in their medicinal cannabis industry, creating a niche market for themselves in the Caribbean region.