### 1AC – Framework

#### The value is morality as ought denotes a moral obligation.

#### The litmus test for ethics is certainty and non-arbitrariness – blurry guidelines for ethics allows agents to inconsistently understand morality or arbitrarily opt out which renders ethics useless since it can’t serve as a guide to action.

#### Thus, the meta-ethic is practical reason.

#### 1] Empirical Uncertainty – only intrinsic and a priori truths like 1+1=2 are certain for agents – relying on the empirics is incoherent because different agents have different interpretations.

#### 2] Solipsism – contingent circumstances such as utility are uncertain – I can never know what another agents feels or thinks which means its nonverifiable but practical reason is universal and applies to all agents. Outweighs since it would be escapable since people could say they don’t experience the same.

#### 3] Infinite Regress – certainty must answer “why” because it would otherwise allow agents to infinitely question why it’s true – other frameworks allow agents to question every part of it, but questioning reason concedes its authority which proves its inescapable.

#### Practical reason is universalizable – its incoherent to claim that 1+1=2 for me, but not for everyone else.

#### Thus, the value criterion is consistency with universalizable maxims – only intentions matter.

#### Prefer Additionally –

#### 1] Performativity – when you enter debate, you presume that you will be free in round because of reciprocally enforced constraints which means objections are impossible and should be ignored on face.

#### 2] Ideal Theory Good – a] Sequencing – we need an ideal world to envision to work towards so only ideal theory can guide action b] Relativity Problem – We can’t assign universal obligation since non-ideal theory commits us to understanding individual circumstances which is radically different for each person

3] **The existence of extrinsic goodness requires unconditional human worth—that means we must treat others as ends in themselves.**

**Korsgaard ’83** (Christine M., “Two Distinctions in Goodness,” The Philosophical Review Vol. 92, No. 2 (Apr., 1983), pp. 169-195, JSTOR) OS

The argument shows how Kant's idea of justification works. It can be read as a kind of regress upon the conditions, starting from an important assumption. The assumption is that **when a rational being makes a choice or undertakes an action, he or she supposes the object to be good, and its pursuit to be justified**. At least, if there is a categorical imperative there must be objectively good ends, for then there are necessary actions and so necessary ends (G 45-46/427-428 and Doctrine of Virtue 43-44/384-385). **In order for there to be any objectively good ends, however, there must be something that is unconditionally good and so can serve as a sufficient condition of their goodness**. Kant considers what this might be: **it cannot be an object of inclination**, for those have only a conditional worth, "**for if the inclinations and the needs founded on them did not exist, their object would be without worth**" (G 46/428). It cannot be the inclinations themselves because a rational being would rather be free from them. Nor can it be external things, which serve only as means. So, Kant asserts, **the unconditionally valuable thing must be "humanity"** or "rational nature," which he defines as "the power set to an end" (G 56/437 and DV 51/392). Kant explains that **regarding your existence as a rational being as an end in itself is a "subjective principle of human action."** By this I understand him to mean that **we must regard ourselves as capable of conferring value upon the objects of our choice, the ends that we set, because we must regard our ends as goo**d. But since "every other rational being thinks of his existence by the same rational ground which holds also for myself' (G 47/429), **we must regard others as capable of conferring value by reason of their rational choices and so also as ends in themselves**. Treating another as an end in itself thus involves making that person's ends as far as possible your own (G 49/430). **The ends that are chosen by any rational being, possessed of the humanity or rational nature that is fully realized in a good will, take on the status of objective goods. They are not intrinsically valuable, but they are objectively valuable** in the sense that every rational being has a reason to promote or realize them. For this reason it is our duty to promote the happiness of others-the ends that they choose-and, in general, to make the highest good our end.

#### 4] The Kantian subject is the opposite of abstract and embraces an embodied subject—universalizability is essential to mutual recognition of others.

**Farr 1** Arnold Farr (prof of phil @ UKentucky, focusing on German idealism, philosophy of race, postmodernism, psychoanalysis, and liberation philosophy). “Can a Philosophy of Race Afford to Abandon the Kantian Categorical Imperative?” JOURNAL of SOCIAL PHILOSOPHY, Vol. 33 No. 1, Spring 2002, 17–32.

**“One** of the most popular **criticism**s **of Kant’s moral philosophy is that it is too formalistic.**13 That is, the universal nature of the categorical imperative leaves it devoid of content. Such a principle is useless since moral decisions are made by concrete individuals in a concrete, historical, and social situation. This type of criticism lies behind Lewis Gordon’s rejection of any attempt to ground an antiracist position on Kantian principles. The rejection of universal principles for the sake of emphasizing the historical embeddedness of the human agent is widespread in recent philosophy and social theory. I will argue here on Kantian grounds that **although a distinction between the universal and the concrete is** a **valid** distinction, **the unity of the two is required for** an understanding of human **agency.** The attack on Kantian formalism began with Hegel’s criticism of the Kantian philosophy.14 The list of contemporary theorists who follow Hegel’s line of criticism is far too long to deal with in the scope of this paper. Although these theorists may approach the problem of Kantian formalism from a variety of angles, the spirit of their criticism is basically the same: The universality of the categorical imperative is an abstraction from one’s empirical conditions. **Kant is** often **accused of making the moral agent an abstract, empty**, noumenal **subject. Nothing could be further from the truth. The Kantian subject is** an **embodied**, empirical, concrete subject. However, this concrete subject has a dual nature. Kant claims in the Critique of Pure Reason as well as in the Grounding that human beings have an intelligible and empirical character.15 It is impossible to understand and do justice to Kant’s moral theory without taking seriously the relation between these two characters. The very concept of morality is impossible without the tension between the two. By “empirical character” Kant simply means that we have a sensual nature. We are physical creatures with physical drives or desires. **The** very **fact that I cannot simply satisfy my desires without considering the rightness** or wrongness **of my actions suggests that my empirical character must be held in check** by something, or else I behave like a Freudian id. My empiri- cal character must be held in check **by my intelligible character**, which is the legislative activity of practical reason. It is through our intelligible character that **we formulate principles that keep our** empirical **impulses in check.** The categorical imperative is the supreme principle of morality that is constructed by the moral agent in his/her moment of self-transcendence. What I have called self-transcendence may be best explained in the following passage by Onora O’Neill: In restricting our maxims to those that meet the test of the categorical imperative we refuse to base our lives on maxims that necessarily make our own case an exception. The reason why a universilizability criterion is morally signiﬁcant is that it makes our own case no special exception (G, IV, 404). In accepting the Categorical Imperative we accept the moral reality of other selves, and hence the possibility (not, note, the reality) of a moral community. **The Formula of Universal Law enjoins no more than that we act only on maxims that are open to others also.**16 O’Neill’s description of the universalizability criterion includes the notion of self-transcendence that I am working to explicate here to the extent that like self-transcendence, universalizable moral principles require that the individ- ual think beyond his or her own particular desires. **The individual is not allowed to exclude others as** rational **moral agents** who have the right to act as he acts in a given situation. For example, if I decide to use another person merely as a means for my own end I must recognize the other person’s right to do the same to me. I cannot consistently will that I use another as a means only and will that I not be used in the same manner by another. **Hence,** the **universalizability** criterion **is a principle of consistency and** a principle of **inclusion.** That is, in choosing my maxims **I** attempt to **include the perspective of other moral agents.**

### 1AC – Contention

#### Resolved: The member nations of the World Trade Organization ought to reduce intellectual property protections for medicines originating from living organisms and biological or living processes. Spec in doc.

Actor – member nations of the World Trade Organization – <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm>

Intellectual Property Protections – 4 types of IP.

Rumore 5/17 [Martha M. Rumore (pharmacist-attorney in Frier Levitt’s Life Sciences Department). “Why every medical practice should care about intellectual property”. Medical Economics. May 17, 2021. Accessed 8/7/21. <https://www.medicaleconomics.com/view/why-every-medical-practice-should-care-about-intellectual-property> //Xu]

As a service provider, you know the name and reputation of your medical practice goes a long way toward the success of your practice. But are you aware that Intellectual Property is one of the most important business assets you have. Intellectual property refers to the legal field that involves protection of creations of the mind and may take many different forms. There are basically four different types of intellectual property and these are detailed in Table 1. More than one type of intellectual property can be used to protect your medical practice. You can have a patent on a drug or device used in a procedure, a trademark on your practice’s name and logo, a copyright on your website content or a publication, and, in some jurisdictions, your patient list may constitute a trade secret. Types of Intellectual Property Trademarks, Copyrights, Patents, and Trade Secrets Trademarks- A Trademark is a distinctive word, name, slogan, symbol, sign, symbol, or combination of these that serves to identify the particular source of products or services and distinguish from other similar or competing products. Copyrights – Copyright protection grants exclusive rights of use to the authorship of an original work. Patents – Patent protection grants exclusive rights of use to the invention of or discovery of any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof.“Anything under the sun made by man.” Trade Secrets –Trade Secret protection grants exclusive rights of use forany formula, practice, process, design, instrument, pattern, or compilation of information which is not generally known or reasonably ascertainable, by which a business can obtain an economic advantage over competitors or customers.

Khor 3 [Martin Khor (director of the Third World Network — a non-profit international network that researches, publishes on, and organises events about issues relating to development — which is based in Malaysia). Why we must fight biopiracy”. SciDev. 23/04/03. Accessed 8/26/21. <https://www.scidev.net/global/opinions/why-we-must-fight-biopiracy/> //Xu]

* IK = indigenous knowledge

What, therefore, can be done to counter the misappropriation of IK by powerful corporations and institutions? Firstly, a revision is needed of IPR laws and regulations covering living organisms, biological resources and the knowledge of their use. Article 27.3b of the TRIPS agreement, which deals with IPR and biological resources, is currently under review. Many developing countries, including those in the Africa Group, have proposed that this section specifies that living organisms and biological or living processes cannot be patented. Unfortunately developed countries, including the United States and the European Union, are opposed to this proposal. Until such a change is adopted, countries should take damage-limiting measures, for example by excluding plants, animals and naturally occurring microorganisms from patentability. They should choose a sui generis system of plant variety protection that endorses the role and value of traditional knowledge, as well as the rights over this knowledge of farmers, of indigenous people and of local communities. Such a system could enable the country involved to protect plant varieties in a way that also protects the knowledge and innovations of local communities.

#### 1] Put away theft turns – biopiracy is stealing.

Khor 3 [Martin Khor (director of the Third World Network — a non-profit international network that researches, publishes on, and organises events about issues relating to development — which is based in Malaysia). Why we must fight biopiracy”. SciDev. 23/04/03. Accessed 8/26/21. <https://www.scidev.net/global/opinions/why-we-must-fight-biopiracy/> //Xu + duongie]

Indigenous knowledge (IK) is now widely recognised as vital for ecological and social sustainability. Yet too often, the rights of the holders and practitioners of such knowledge are not respected by those seeking to make use of it. Indeed, these rights are being eroded, in particular by the invasion of the modern intellectual property system into the domain of IK. Action is urgently needed to reverse this process. The economic contribution of IK to our ability to make sustainable use of biological resources is enormous. According to one estimate, for example, the germplasm from developing countries being used in the global pharmaceutical industry was worth at least US$32 billion a year in the early 1990s. Yet developing countries receive only a minute fraction of this for the raw materials and knowledge that they contribute to the growth of some of the world’s largest industries. Equally outrageous is the fact that companies and institutions from developed countries are using intellectual property rights (IPRs) to misappropriate the IK of local communities. The patenting of life forms, for example, has increased tremendously since the establishment of the Trade Related Intellectual Property Rights (TRIPS) Agreement of the World Trade Organization (WTO) in 1995. TRIPS makes it mandatory for WTO member states to allow patenting of at least some life forms (i.e. microorganisms) and some living processes (i.e. microbiological processes). It also requires the protection of plant varieties, either through patents, or through an “effective sui generis system” — a reference to an independently created system developed by a government. This part of TRIPS has been a major mistake. It has opened the floodgates to the patenting of biological resources, and of IK about the use of these resources. In broad terms, biopiracy removes the rights of communities (mostly in developing countries) and instead supports the rights of private institutions (mostly in developed countries) that are granted patents. These IPR holders are able to make monopoly profits by commercialising the patented products and the IK associated with them. In contrast, the local communities that developed or made use of the knowledge in the first place — and should therefore be considered as the rightful owners — usually get no benefit. An even more ironic situation arises if the patented process or product leads to the sale of products at high prices in those very developing countries from which they originated. Indeed, this form of biopiracy creates a form of “reverse technology transfer”, as it is the poor developing countries that transfer knowledge and technology to the rich developed world. But the developing countries involved get scant reward for their contributions; and indeed may eventually have to pay institutions in the rich countries a high price (itself sustained by monopolistic IPRs) for the use of the product or process, potentially creating a large drain on developing countries’ foreign exchange, and adding to their foreign debt.

#### 2] Biopiracy patents indigenous peoples which treats them as means to an end – that’s the worst impact since it literally treats tissue and blood samples as a mere means since they don’t get financial reparations.

Stenton 03 [Gavin Stenton (dual-qualified solicitor and chartered trade mark attorney, co-head of the firm’s fashion and luxury brands group and a member of MARQUES' international trademark law and practice team and the Bucharest Bar Association). “Biopiracy within the Pharmaceutical Industry: A Stark Illustration of how Abusive, Manipulative and Perverse the Patenting Process can be towards Countries of the South.” Intellectual Property Law (LW556) Dissertation. 2002/2003. Accessed 8/27/21. <https://studylib.net/doc/7759695/a-stark-illustration-of-how-abusive--manipulative> //Xu+Elmer]

The potential scope of biopiracy is clearly not restricted to exotic vegetation and soils as it also encompasses rare and highly toxic animal species [[1]](#footnote-1) but even more alarmingly, indigenous peoples themselves. Tissue and blood samples are regularly exported from developing countries for research into a particular field, which are then often abused when they are found to have properties that may prove useful in another field of medicine leading to a multi-million dollar pharmaceutical product. More alarming is the current tendency of pharmaceutical companies to exploit innocently collected material in gene banks and cell libraries, which has been collected over periods of time from indigenous communities and has been, until today, off bounds for conversion into patent rights. Such practices illustrate the absence of any moral considerations but more fundamentally, do not recognise the energy and effort that certain indigenous communities have invested for centuries in the cultivation and conservation of such valuable species of plant and organism upon which they remain dependent for food security and health. An analogy with sections 39-42 of the UK Patent Act 1977 can be drawn, as such materials and TK are clearly of “outstanding benefit” to the pharmaceutical industry with it being therefore “just” to furnish a financial reward for this invaluable contribution. Despite the absence of any contractual lien, equity clearly demands that the custodians of TK and biological resources should receive fair compensation if such knowledge leads to commercial gain. In applying a ‘but for’ test, one remarks that, ‘but for the TK or raw material, the final pharmaceutical product would not have resulted’. Presently, not only is the pharmaceutical industry gaining an invaluable resource gratuitously but it is also gaining centuries-worth of free testing. Such compelling arguments evidently provide an undisputable justification for significant remuneration.

### 1AC – Advantage

#### The Advantage is BioD –

#### 1] Brazil – pharmaceutical biopiracy causes environmental exploitation, deforestation, and illegal trafficking – it’s 20% of Earth’s total.

Danley 12 [Vanessa Danley (LL.M., University of Oregon School of Law). “Biopiracy in the Brazilian Amazon: Learning from International and Comparative Law Successes and Shortcomings to Help Promote Biodiversity Conservation in Brazil”. Florida A & M University Law Review. Spring 2012. Accessed 8/27/21. <https://commons.law.famu.edu/cgi/viewcontent.cgi?article=1065&context=famulawreview> //Xu]

Brazil has 10% to 20% of all biodiversity in the entire planet, more than any other nation.15 The Amazon forest holds most of the Brazilian biodiversity and is home to various indigenous communities. Brazil is a developing country in the process of pursuing significant social and economic development. However, its biodiversity and indigenous communities are imperiled by this development. Biopiracy not only encompasses the illegal trade of species of animals and plants, but also the illegal appropriation and monopoly of the knowledge of traditional populations regarding the use of natural resources exiting in the environment. 16 This exploitation results in the loss of property rights in natural resources essential for the indigenous communities' survival.17 Moreover, this exploitation contributes to the extinction of endangered species and serious environmental degradation.18 Products and byproducts derived from Amazon biodiversity are mostly used by the pharmaceutical and biotechnology industries (usually located in the North) and are also referred to as "green oil."9 Despite the very lucrative aspect of this activity, the exploited State (usually located in the South) and the indigenous communities whose knowledge helped the industry to find and market the green oil do not receive any percentage of the foreign companies' profits.20 Biopiracy in the Amazon forest creates a vicious cycle. The foreign individuals and entities benefit from the traditional knowledge and buy the resources needed at a very low cost. A very simple formula of the exploitation emerges: free knowledge + cheap resource = millions of dollars worth of products. Biopiracy causes Brazil to lose $16 million per day, mostly as a result of lack of better public policy and poor enforcement of existing legislation. 21 The pharmaceutical and biotechnology markets yield approximately $700 billion per year.22 The market for medicinal plants alone, with the help of traditional knowledge, is $43 million. 23 Unfortunately, most of the resources are obtained through biopiracy. Brazil and the indigenous and other traditional communities do not participate. 24 A. The Illegal Extraction of Plants The uncontrolled exploitation of plants is responsible for the loss of Amazon biodiversity. The Brazilian Institute of the Environment and Natural Renewable Resources (IBAMA) estimates that thousands of medicinal plants and wood are illegally exported each year. 25 Moreover, two thirds of the plants used by pharmaceutical companies are from tropical rainforests. 26 Foreign scientists have come to Brazil to operate an NGO, allegedly to promote conservation. 27 But the reality is that under the NGO veil, they illegally work with the indigenous communities to catalog plants and their medicinal capabilities and then sell them to foreign corporations. 28 The wood trade is a significant threat to Brazil's tropical forests. The United States, for example, is the largest importer of mahogany. 29 The over-harvesting of this type of wood causes deforestation. Deforestation is a result of not only the extraction of the mahogany tree itself, but also the cutting of trees in nearby areas due to the need for open spaces to allow transportation of the logs. Deforestation causes habitat alterations and, consequently, loss of biodiversity.30 Besides wood, many other plants are exported without any regulatory measures. The Amazon native plants are largely used in the pharmaceutical, cosmetics, food, and pesticide industries.3 1 Foreign companies obtained patents for many Brazilian plants. For example, Aveda, a North American corporation, has a patent on the "copaiba," an Amazon tree. The Body Shop, a British corporation, has a patent on the fruit, "cupuagu," also found in the Amazon. 32 Merck Laboratories has a patent on the "jaborandi." "Jaborandi" contains the "pilocarpina" molecule, which is an important component of glaucoma medicine. 33 The most recognizable of the entire Brazilian flora is the "agai." The agai is also known as "superfood" because of its many health benefits. 3 4 In 2003, a Japanese company named K.K. Eyela Corporation registered a patent on the "agai" berry. 35 In 2007, after pressure from Brazil, the Japanese company cancelled the patent. 3 6 In an attempt to avoid international patents of its natural products, the Brazilian government created a list of more than 5,000 generic names of the Brazilian biological resources and sent it to international organizations to discourage registration. Although this initiative is a good start, it has been questioned because there are trademarks already registered in the U.S. for agai products .37 B. The Illegal Trade of Endangered Species The trade of wildlife is the world's third largest illegal activity, after guns and drugs.38 Brazil's participation in this trade is estimated to be around 15%. Animals are traded for various reasons. Primates are mostly used for biomedical research. Birds, reptiles and mammals are used for pets, and for their byproducts, such as fur and skin.3 9 According to the National Report on the Illegal Trade of Wildlife,4 0 illegal trade has three aspects. The first is the use of animals by collectors and private zoos, which consists mainly of endangered and rare species. 4 1 For example, a blue macaw (endangered) is worth $60,000 in the international market. 42 The second aspect of illegal trade is the use of wildlife as pets and the sale to pet shops around the world.43 Finally, the third aspect and the focus of this paper, is the illegal trade of animals for scientific research. 4 4 This type of trade is considered biopiracy. It targets species that have some kind of chemical substance, which could be used in medicine production. For example, a type of snake called "jararaca-ilhoa" is worth about $20,000 in the international market because of its venom.45 Similarly, the brown spider's venom is being sold for $24,000.46 The possibility of new medicines that could be manufactured from the substances produced by these animals is very attractive to industries and the sale of these animals is very lucrative to poachers. 47 Developed countries are the most significant consumers of the animals, through the "black market." According to the Brazilian Federal Police, 38 million animals are captured illegally, and 40% are exported to developed countries. 4 8 This activity involves about $1 billion per year in Brazil. IBAMA recognizes that uncontrolled exploitation of the Brazilian natural resources is the number one cause for environmental degradation, which leads to the extinction of many species .49 As a consequence of the illegal trade, developed countries have a vast number of animals that are now legally bred in captivity.50 Animals from Brazil, such parrots and macaws, became popular and are readily available throughout the world. Sadly, data shows that there are more animals (native to Brazil) in captivity around the world than in Brazil.51 Some species are facing extinction in Brazil, but are largely bred in other parts of the world. 5 2 It is disturbing to know that 90% of the wildlife trade in Brazil is illegal. Due to poor conditions in transportation and handling, only one animal (out of ten captured) survives.53 Considering these numbers, loss of biodiversity is inevitable, not only in the Amazon forest, but also in other parts of Brazil.

#### 2] India – TK is the source and only sustainable facilitators but bio-pirated IP degrades a global biod center.

Sharma et al 18 [Bhavika Sharma (Department of Environment, Chandigarh Administration), Shalini Singh Maurya (Indian Council of Agricultural Research), and Brahmacharimayum Jesmita Devi (Central Soil and Water Conservation Research and Training Institute). “India’s Fight Against Agricultural and Medicinal Plants’ Biopiracy: Its Implications on Food Security, Traditional Rights and Knowledge Degradation”. International Journal of Agriculture, Environment and Biotechnology. December 2018. Accessed 8/27/21. <https://www.researchgate.net/publication/330903124_India's_Fight_Against_Agricultural_and_Medicinal_Plants'_Biopiracy_Its_Implications_on_Food_Security_Traditional_Rights_and_Knowledge_Degradation> //Xu]

At present, about two-third of the Indian population relies on indigenous knowledge of biological resources and have conserved their knowledge and culture through their traditional lifestyles and local economies. More than 7500 species of plants are utilized for the traditional purposes in India. The economic value of traditional knowledge in the herbal medicine and pharmaceutical sector is estimated to reach around 5 trillion by 2020. Since Indian agriculture is highly rich in biodiversity, it becomes an easy prey of biopiracy in agriculture-based business corporations. Biopiracy term is generally used when multinational corporations or companies profit from the medicinal and agricultural uses of plants known to indigenous or native societies and fail to compensate those communities. Traditional Knowledge (TK) plays a key role in the preservation and sustainable use of biodiversity. There is a threat to the future of TK due to globalization of production systems and the distance between the holders of knowledge and its exploiters. Many cases have been registered in India where attempts have been made to steal the indigenous knowledge from India due to its easy access which affect food security, livelihood of indigenous people and even cause changes in consumers’ choice. Indian government challenged many patents in the last two decades by providing numerous research papers predating those patents and these patents were thus rejected. India is the pioneer country in the world to have set up an institutional mechanism – the Traditional Knowledge Digital Library (TKDL) – to protect its TK. Biopiracy in the Indian Agricultural Sector A major fraction of the world’s population, mostly the underdeveloped areas and rural communities, still rely on the indigenous medicinal knowledge of locally available plants for not just their medical requirements (Shankar 1997; Bhattacharya 2014), but also for food and agriculture (Bhattacharya 2014). Traditional knowledge not only includes the recorded knowledge of plants for medicinal use, but also takes into account the oral knowledge that has been passed on from ancestors (Bhattacharya 2014). There has been great scientific interest in the lifestyle, knowledge and culture of indigenous people since the traditional knowledge acquired by rural communities over a number of years forms their basic cultural identity. The people living in local communities maintaining fairly traditional lifestyles are termed as “indigenous people” (Andrews 2012). A majority of the Indian population (70%) is dependent on land-based occupations, forests, wetlands and marine habitats for ecological and cultural sustenance (Kothari and Patel 2006). With an estimated 163 horticultural and crop varieties which have originated in the country, India is one of the world’s eight major centers of crop diversity and has centuries’ old traditional knowledge (Sudha 2014). Even today, about two-third of Indian population relies on indigenous knowledge of biological resources and have conserved their knowledge and culture through their traditional lifestyles and local economies. More than 7500 species of plants are utilized for the traditional purposes in India. The plant genetic resources were considered to be a common heritage until the last century (Brush 2005). Common heritage refers to “the treatment of genetic resources as belonging to the public domain and not owned or otherwise monopolized by a single group or interest” (Brush 2005; Andrews 2012). Biopiracy and food security Biopiracy will increase the dependence of farmers on corporations for their agricultural inputs such as seeds, fertilizers, pesticides and herbicides. Developing countries would face the challenges even more, since farmers of such nations cannot afford to buy seed each year and segregate a fraction of their harvest for planting in the next growing season (Yusuf 2010; Bhattacharya 2014). Biopiracy can have a devastating effect on the economy and food security of the farmers in developing countries which can ultimately destroy the locally adapted, traditional crop varieties which are cheaper alternatives (Bhattacharya et al. 2013). Since Indian agriculture is highly rich in biodiversity, it becomes an easy prey of biopiracy in agriculture based business corporations. For instance, Monsanto tried to extend their reach to the Indian population by selling genetically modified brinjals in the form of Bt Brinjals, in spite of the fact that India itself grows more than 2500 unique varieties of brinjals. The Indian National Biodiversity Authority (NBA) filed a legal action against Monsanto (and their collaborators) for accessing local eggplant varieties for development of their genetically engineered version of eggplant without taking any prior consent of the competent authorities, which is considered an act of biopiracy. The law mandates that “when biodiversity is to be accessed in any manner for commercial, research and other uses, local communities who have protected local varieties and cultivars for generations, must be consulted and if they consent benefits must accrue to them as per the internationally applicable Access and Benefit Sharing Protocol.” (Ministry of Environment and forests 2010; Bhattacharya 2014). DISCUSSION Traditional Knowledge Degradation The people using the Traditional Knowledge (TK) are the same who are actually holding it, using it sustainably through generations and communities. It is closely related and intertwined with the communities involved and the resources available in the environment around them. Modern system of knowledge (which is actually developed through years and not generations) and its exploitation are a result of the industrialization process, where production and not sustainable utilization is the answer (Kaushik 2004; Gupta et al. 2015). Both modern and traditional knowledge are prevailing factors in production; thus, local communities and people are been exploited in an unsustainable and inequitable manner. The holders of TK lack the awareness to protect it through modern legal systems and they do not even seek due compensation for its use (Kaushik 2004). These situations in today’s world when combined together may lead to the unfortunate consequence of disappearance of overall TK (Kaushik 2004 and Gupta et al. 2015). There is a threat to the future of TK due to globalization of production systems and the distance between the holders of knowledge and its exploiters. Another known aspect highlighted in both the Convention on Biological Diversity (CBD) and the International Undertaking on Plant Genetic Resources (IU) of the Food and Agriculture Organization (FAO) is that the TK plays a key role in the preservation and sustainable use of biodiversity. Numerous activities and production based on TK are the important sources of income, food, and healthcare for large parts of the populations and communities, trailing to development of the country also. Thus, TK is being rapidly lost as traditional communities are integrated into the wider societies, and the local ecosystems are been degraded (Twarog and Kapoor 2004). India’s Combat against Biopiracy Many cases have been registered in India where attempts have been made to steal the indigenous knowledge from India due to its easy access which affect food security, livelihood of indigenous people and even cause changes in consumers’ choice. The persons involved in plundering natural resources from the developing and less developed countries prosper, while the persons from whom benefits are derived suffer since they are paid only petty amounts and sometimes are not even paid at all (Bhattacharya 2014). ‘Biopiracy’ term is generally used when multinational corporations or companies profit from the medicinal and agricultural uses of plants known to indigenous or native societies and fail to compensate those communities” (Dwyer 2008; Andrews 2012). Alternatively, it refers to “appropriation, generally by means of patents, of legal rights over indigenous biomedical knowledge without compensation to indigenous groups who originally developed such knowledge” (Sudha 2014). There have been a number of cases of biopiracy of traditional knowledge from India, commonly observed in plant varieties such as Haldi (Turmeric), Basmati, Neem etc. (Bhattacharya 2014). According to a study conducted in 1999, global market value of industries using biological and genetic material is estimated between $500-800 billion. The economic value of traditional knowledge in the herbal medicine and pharmaceutical sector is estimated to reach around 5 trillion by 2020 (Sudha 2014; Shah 2014). A few instances of biopiracy have been presented in Table 1.

#### 3] Sri Lanka – meta-analysis proves medicinal biopiracy causes BioD loss but is invisibilized by Big Pharma.

Imran et al 2/19 [Yoonus Imran, Nalaka Wijekoon, Lakmal Gonawala, (Interdisciplinary Centre for Innovation in Biotechnology and Neuroscience, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka) and Yu-Chung Chiang (Department of Biological Sciences, National Sun Yat-Sen University, Kaohsiung, Taiwan), and K. Ranil D. De Silva. “Biopiracy: Abolish Corporate Hijacking of Indigenous Medicinal Entities”. The Scientific World Journal. Published 19 February 2021. Accessed 8/27/2021. <https://www.hindawi.com/journals/tswj/2021/8898842/> //Xu]

According to [3], the definition of biopiracy is “the unauthorized extraction of biological resources and/or associated traditional knowledge from developing countries, or the patenting of spurious inventions based on such knowledge or resources without compensation.” The hidden cases of biopiracy were started opposed, and the term biopiracy was coined in the 1990s by environmentalists and nongovernmental organizations [6]. Biopiracy as “a silent disease” is hardly detectable because it frequently does not leave any traces. Unfortunately, the electronic media favours to highlight environment pollution and deforestation, while biopiracy incidents are less reported. This silent pillaging is depriving countries that lack proper advancement in biotechnology primarily in Africa, Latin America, and Asia of the means to financially support developing and sustaining biotechnological projects. Biopiracy disrupts biodiversity conservation efforts [7–9]. The corporate hijacking of food is the most important health hazard in this era; using intellectual property rights, larger cooperation gets patent on indigenous medicinal plants, seeds, genetic resources, and traditional formulas by excluding local identity, as listed in Table 1. Taking advantage of these rights, “biopiracy” has happened by taking biological resources from one country to another country with the intention of building up global economies. As highlighted at the protest in the late 1990s by Dr. Vandana Shiva, the two examples from Indian context can be highlighted as basmati varieties of rice are transferred to build up the rice economy of United States and the export of neem seeds from Indian farms by giant corporates [15, 20]. According to [21], this undoubtedly indicates that European companies make enormous profits by using the biological properties of native and endemic plants from the developing countries but nothing goes back to them [21]. The share of the international trade of herbal products and alternative medicine market in a global economy has been increasing at a rapid rate of approximately 15% annually. Approximately 29,000 herbal substances used by more than 1000 companies have annual revenues exceeding US$ 60 billion, with the bulk of the herbal products, or at least the raw material sourced from biodiversity-rich countries in Asia, Africa, and South America [22, 23]. Thereby, biopiracy has long been a concern of developing nations with rich biodiversity. “Nagoya Protocol” has given a resolution of the controversy in bioprospecting, and solutions will lead to many researchers neglect by showing their burden of regulation to work [24]. 2. Review Methodology The review process was divided into three major steps: title, abstract, and document screening. The previous biopiracy cases and natural product authentication techniques are reviewed in this article. Literatures were searched in the world’s acknowledged databases including PubMed, Medline, Scopus, Embase, and Springer. The search was based on the key words: Biopiracy, Plant Authentication, Plant Barcode, Plant Marker, Bioprospecting, and Microsatellite DNA marker, and 4011 publications were identified. All the titles were screened, and 565 documents were downloaded for abstract screening. All 565 abstracts were screened, and 320 articles were retained which appeared to meet inclusion criteria: Biopiracy, Plant Authentication, Plant Barcode, Plant Marker, Bioprospecting, and Microsatellite DNA marker. Finally, the full text of all 320 retained documents was critically assessed using the same inclusion/ exclusion criteria as the abstract screening, leaving 61 papers to be included in this review. Finally, reference lists of all 66 papers were inspected for additional relevant citations (see Figure 1). 3. Sri Lanka: A Biodiversity Hotspot Sri Lanka has been spotted in the top 34 biodiversity hotspots globally, and it has the highest biodiversity per unit area of terrestrial among Asian countries. The wet zone rainforests are home to nearly all of the country’s woody endemic plants [25]. Moreover, Sri Lanka has localized in the tropics and an range of plant species that have been utilized by human generations for herbal treatments and for treatment of diseases [26]. The 3 millennia old tested and proven efficacy of indigenous medicinal system in Sri Lanka is still in use by the locals. In the identified 1,500 species of medicinal plants in Sri Lanka, only a small percentage have been studied for their potential value as a source of drugs [27]. Biodiversity of Sri Lanka has a vast potential to be transformed as a source of funding. Most Multinational biotechnology companies rely on the genes of living organisms as its raw materials where they reiterate the old “Gold Rush” as new “Gene Rush” with the ultimate goal of future profits. Imminent danger to Sri Lankan biodiversity has been raised due to this quest for genetic resources among biopirates. Recent developments relating to biopiracy have been entered on a large alarming scale. Sri Lanka after its 30 years of civil war is looking towards sustainable development. Sustainable development must equip with the environment protection where conservation of biodiversity plays a significant role [28, 29]. Sri Lanka endows with a diversity of production of agriculture crops and is also rich in a range of spices including cinnamon, rubber, coconut, pepper, cardamom, cloves, nutmeg, and mace. The export of spices and allied products constitutes nearly 56% of the entire agricultural products. Especially Sri Lanka exports approximately 90% of true cinnamon to the world market and is the largest true cinnamon exporters in the world. Though Sri Lanka is owing to the worldwide demand for true cinnamon, pure cinnamon powder is often being adulterated with other inferior qualities. In a meeting for “Spicing up development assistance” in [30], United Nations Industrial Development Organization (UNIDO) agreed to help Sri Lankans to fulfill their vision of making Ceylon cinnamon as a one billion dollar industry [30–33].

#### BioD is on the brink, unpredictable, and causes food insecurity.

Niranjan 19 [Ajit Niranjan (environment and globalization reporter in Berlin). “Why biodiversity loss hurts humans as much as climate change”. Alumniportal Deutschland. May 2019. Accessed 8/27/21. <https://www.alumniportal-deutschland.org/en/global-goals/sdg-15-terrestrial-ecosystems/loss-of-biodiversity-and-its-consequences/> //Xu]

A UN-backed report says a million species are at risk of extinction, and warns biodiversity loss and failure to conserve ecosystems has catastrophic effects on people as well as nature. They are the tireless stewards of the air, water and land from which we live. But the millions of species whose toil underpins our prosperity are gravely endangered by human activity, scientists say — and that imperils us in turn. Biodiversity loss is as big a threat to humans as climate change, said UN biodiversity chief Robert Watson last week at a conference in Paris to release a landmark report on global biodiversity and ecosystems. "The continuing loss of biodiversity will undermine our ability for poverty reduction, food and water security, human health and the overall goal of leaving nobody behind." The report, the first of its kind since 2005 and published today by the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), warns of grave consequences to humanity from mass die-offs and degradation of nature. Drawing together the work of more than 400 experts, it paints a bleak picture of a world in which essentials such as food and drinking water are endangered through species and ecosystem decline. The unprecedented and accelerating deterioration of nature in the past 50 years has been driven by changes in land and sea use, exploitation of living beings, climate change, pollution and invasive species, the report found. These five drivers are, in turn, underpinned by societal behaviors ranging from consumption to governance. In a blow to human progress, damage to ecosystems undermines 35 of 44 UN sustainable development targets for poverty, hunger, health, water, cities climate, oceans and land, the authors found. Diplomats from 130 nations gathered in Paris last week to agree on the final wording of the report's summary for policymakers. „The loss of species, ecosystems and genetic diversity is already a global and generational threat to human well-being,“ said Watson. „Protecting the invaluable contributions of nature to people will be the defining challenge of decades to come.“ WHY BIODIVERSITY MATTERS Biodiversity, a contraction of biological diversity, means the abundance and variety of life on the planet. The definition encompasses more than just the creatures we can see. It ranges from tiny genes, bacteria, plants and animals, right up to ecosystems such as the Amazon rainforest and Great Barrier Reef. That makes it hard to count — and even harder to value. While there are about 1.5 million identified species in the world, scientists estimate the true figure may be closer to ten million or even as many as two billion. Many organisms are so small they can only be identified as distinct species through DNA sequencing. "If you think about biodiversity, you think about tigers and polar bears," said Rebecca Shaw, chief scientist at the World Wildlife Fund. "Those species are very important — but also important are the species you never see and talk about." Without bees pollinating crops and trees turning carbon dioxide into oxygen, even basic human tasks such as eating and breathing become harder. But quieter losses hurt people too, such as the decline of medicinal plants and mangroves that protect coastlines. The ways in which organisms interact mean the decline of any single species can trigger unexpected losses in the wider ecosystem. For instance, a fall in earthworms, fungi or soil microbes limits the amount of recycled nutrients in the soil and the number of holes for rainwater to flow through, stunting crop growth and hindering humanity's ability to feed itself. „We don't consider that nature, but it is nature,“ said Shaw. „Not paying attention to all those complex interactions in the soil — and thinking we can just put on fertilizer or pesticide and have it stay the same productive soil into the next generation — is foolish.“ The report found that about a quarter of the plant and animal species assessed face extinction, many within decades, unless urgent action is taken. HOW IT HURTS US Counted by biomass, humans comprise just 0.01 % of global biodiversity. But the report details the outsized ways in which our species has endangered others by razing forests, polluting rivers, overfishing oceans, killing off insects, and otherwise hurting nature in a headlong push to extract its resources. „Nature makes human development possible but our relentless demand for the earth’s resources is accelerating extinction rates and devastating the world’s ecosystems,“ said Joyce Msuya, acting head of UN Environment. The report also found: Human action has significantly altered more than two-thirds of the environment. The global extinction rate today is tens to hundreds of times higher than its average over the past 10 million years. More than a third of the world's land surface and nearly 75 % of its freshwater sources are now used for crop or livestock production. Agriculture is particularly sensitive, with just nine plant species now accounting for more than two-thirds of global crop output, and, as Shaw described, the soil on which they grow under threat. In a sign of the powerful feedback loops at play, agriculture is itself a major driver of biodiversity loss, with pesticides, soil erosion and forest clearance destroying habitats and sinking wildlife populations. And in addition to its effect on food systems, the devastation of the earth's soil reduces its ability to retain water, hitting humans by increasing water stress and the frequency of floods.

#### Causes destabilization, global draw-in, and nuclear war.

DeFeo 17 [Michael DeFeo (graduated in 2019 with a Bachelors degree in Political Science from Gettysburg College). “Food Insecurity and the Threat to Global Stability and Security in the 21st Century”. Inquiries Journal. VOL. 9 NO. 12. 2017. Accessed 8/27/21. <http://www.inquiriesjournal.com/articles/1712/food-insecurity-and-the-threat-to-global-stability-and-security-in-the-21st-century> //Xu]

In 2010, over 250,000 Syrian farmers were forced from their land due to water shortages. Lack of water left these farmers dangerously food insecure, so they moved, en masse, into Syrian urban centers. This strained an already overburdened infrastructure which increased tensions between urban dwellers and the displaced farmers (El Hassan, 2014). One year later, the Syrian Civil War began, which has killed over 500,000 Syrians and has destabilized the entire country. Since then, the Islamic State has conquered swaths of land through terror campaigns, rebel and Syrian military clashes have left thousands dead, while bombing campaigns by American, Russian, French, and Turkish air forces have reduced cities to rubble. The conflict began as a civil war but has evolved to threaten the interests of major world powers. While limited access to food and water did not directly spark the violence in Syria, it was the underlying cause of the instability seen in that region today. Concerns about access to food can be applied to many of the world's developing countries. Developing countries generally have large agricultural sectors but may lack the infrastructure or government institutions to supply all of its citizens with adequate food. When people are hungry, they often fight their government, or they break into ethnic or religious factions and fight each other. Such conflicts can destabilize countries and even, as Syria has proven, entire regions. Regional destabilization in the developing world, in turn, threatens the peace and security of the international community. Rich countries such as the United States and Western Europe, must support developing countries through aid and trade policies so that food insecure countries do not become fragile or failed states. Causes of Food Insecurity Many developing nations experience food and water insecurity on a higher scale than developed nations because of irresponsible or malicious government policies, the effects of climate change, and rising food prices. The war in Afghanistan has left many rural Afghans without access to food because of increases in staple food prices. Using a multivariate framework, D’Souza and Jolliffe (2013) found that provinces experiencing declines in food security have been active hotspots for violence. The pains of food shortages have been felt in Afghanistan long before the American invasion in 2001, however. During the 1990s, civil conflict made it extremely difficult to grow and distribute enough food to feed everyone. Adequate supply and distribution of food may be more important than food production itself because it actually became a military strategy to starve off certain armed groups and civilian supporters (Clarke, 2000). More commonly, the flow of staple food was inadequately disrupted as a result of the conflict. Fighting closed roads and increased the cost of transportation, making it extremely difficult to reach rural areas. Similar problems affected Syrian farmers in 2010. Destruction of roads and shutdowns cut off transportation of food in or out of the cities, which starved rural civilians. Their desperation helped bolster Islamic State ranks because joining the group provided a better promise of food (El Hassan, 2014). The displaced farmers in the cities found themselves relying on locally produced food to survive rather than their own harvests. This is a massive problem that follows food insecurity in rural areas. Insecurity leads to urbanization, thus forcing more citizens to rely on other farmers or the government to feed them. Such conditions strain already weak government institutions and can lead to internal conflict (Byrd, 2003). Sudan dealt with urbanization very poorly in the early 2000s which helped continue the Second Sudanese Civil War. Sudan faced particularly brutal circumstances in the 21st century because of late rains, disruptions in trade,1 high levels of displacement, and higher food prices (Moszynski, 2009). The Janjaweed, who controlled the government, refused to provide certain areas with sufficient food, which increased violent responses from the Sudanese People's Liberation Army (Moszynski, 2009). Higher food prices and potential effects of climate change also played roles in the Sudanese crisis. It was not just a lack of rain and high food prices that starved Syria, Sudan, and Afghanistan, it was their government’s inability to remedy these problems in the first place. Poor Institutional Capacity Although the developed world experiences food insecurity, it is the lack of infrastructure and government institutions in developing countries that contribute to civil wars and state fragility. Foreign exchange shortages can provoke food and fuel scarcities that force governments to spend less on essential services and public goods. Accordingly, citizens see their medical and educational entitlements melt away. Such circumstances create breeding grounds for internal conflict. All violent conflicts destroy land, water, and social resources for food production. Developing countries do not have massive industrial machines that can remedy such losses, therefore, the population will suffer. Food insecurity is a recruitment tool for violent extremist groups. Promising food and water to a starving population, especially in urban areas, makes recruiting young and disgruntled youth easier (Messer & Cohen, 2015). Syria had limited institutional capacity to deal with the mass displacement, and that lead to a civilian revolt and recruitment into the Islamic State. Countries that fail to provide their people with basic services often experience gross economic inequality, and even human-rights violations, as was the case in both Syria and Sudan. Both countries are classified as Least Developed Countries (LDCs). LDCs are distinguished not just by their widespread poverty, but also by their structural weaknesses in economic, institutional, and human resources that make them unable to maintain stability during a drought. The combination of drought and political instability or violence led to famine in Somalia (another LDC) in 2011. Even with urgent humanitarian action, the country still plunged into chaos and violence (Messer & Cohen, 2015). Severe drought, like Somalia's, may result in crop failure in major food producing areas, which in turn is a significant threat to social stability and peace (Wischnath, 2014). Sometimes droughts of exceptional severity (and the civil unrest that follows) are attributed to climate change, especially in particularly arid regions. Scholars are divided on whether climate change actually impacts civil conflict. That is why African countries like Somalia and Sudan are prime case studies. Africa has the lowest percentage of irrigated land in the world. Agriculture is the most important sector of most African countries. Very high percentages of civilians in African countries live in rural areas. Those characteristics combined with low economic and state capacity make African, particularly sub-Saharan African countries the most vulnerable to climate change and civil instability. Africa experiences more civil conflict than other parts of the world, therefore, it is possible to argue that a lack of climate variability effect on civil conflict in Africa would make it unlikely to cause civil conflict in other parts of the world (Koubi et al., 2012). Secretary-General of the United Nations, Ban Ki-moon attributed the conflict in Darfur to an ecological crisis arising “at least in part from climate change” (Ki-moon, 2007). The Fourth Report of the Intergovernmental Panel on Climate Change assessed that climate change will continue to worsen. As it does, it will increase food shortages, which may lead to conflict (AR4, 2007). The report also stated that forced displacement and rising social instability is the most likely result of food insecurity. This is almost exactly what happened in Syria. The first step towards conflict might be food riots, which often occur during a food shortage or when there is an unequal distribution of food. These are usually caused by food price increases, food speculation, transport problems, or extreme weather. In 1977, Egyptians became so desperate for food that they attacked shops, markets, and government buildings just to obtain bread and grain (Paveliuc-Olariu, 2013). Moreover, civil war can create economic opportunities for certain groups, so they try to avoid resolving the conflict. Urban elites in Somalia profited tremendously off of internal conflict because of the absurd amount of foreign aid that was pumped into the country and then largely stolen (Shortland, Christopoulou, & Makatsoris, 2013). Once a country experiences a food shortage, it may lead to protests, riots, and violence. This all contributes to state instability, but it is not the state alone that suffers. If one country fails, it creates a crisis that could destabilize an entire region. State Failure and the Threat to Regional Stability Although fragile governments in developing countries are at a heightened risk for internal conflict that could topple them, that risk also threatens the country’s neighbors. After the Soviet Union collapsed in 1991, Afghanistan found itself alone in regional trade. Without a guaranteed source of cereal, the government had to turn to Iran and Pakistan for support in order to avoid its own collapse (Clarke, 2000). Unlike Afghanistan, many other developing countries have been unable to work together on food and water security. Thirteen of the twenty-two members of the Arab League rank among the most water-scarce nations on the planet. Food cannot be grown without water. The majority of the world is engaged in some sort of agreement with neighboring countries to share water supplies, but thirty-seven countries still do not share their water resources (El Hassan, 2014). Lack of cooperation can cause civil as well as interstate conflict. South Sudan legally has no share of the Nile River and the effects of that lack of water access have been mass starvation and violence. The effects of climate change, water shortages, and mass migrations have resulted in acute food insecurity not just in Syria, but across the region (El Hassan, 2014). Food insecurity, plus an increase in the prices of staple foods have destabilized much of the area. The Arab Spring was the beginning of multiple conflicts that have affected countries like Syria, Egypt, and Libya. In Syria, food insecurity resulted in mass violence and has now created an international crisis involving multiple world powers. Food insecurity is such a threat to entire regions because people cannot live without food and people want to live. When a region experiences food scarcity and that population feels threatened by hunger, it will relinquish dependency on any political authority and take up arms in order to ensure its well-being (Paveliuc-Olariu, 2013). This is human survivalism. It is important for developing countries in areas that are at risk for food insecurity to formulate policy that ensures aid goes to the food insecurity hotspots so as to maintain stability. South Sudan experienced what happens when countries do not work together to feed their people. After gaining its independence from Sudan in 2011, 360,000 South Sudanese refugees returned to the country. This influx of human beings, coupled with drought conditions exacerbated economic strain and drove food prices up. The increases were the result of trade restrictions between Sudan and South Sudan. The overall reason for the food crisis, however, was the government's preoccupation with fighting a political and quasi-ethnic civil war rather than negotiating fair access to the Nile River (Tappis et al., 2013). Because of South Sudan’s weak institutions, it has done little to address the food shortage. That inability to solve the problem fuels insurgent recruitment that continues the bloodshed in South Sudan. The conflict is keeping regional rivalries alive with Uganda, Kenya, Ethiopia, and Sudan; all of whom have attempted to intervene in South Sudan militarily to bring about stability (Council on Foreign Affairs 2016). Aside from South Sudan, multiple conflicts across Africa are consuming massive amounts of diplomatic, political, and humanitarian resources in a region that faces a multitude of threats. South Sudan, Somalia, and Syria are all failing states that are experiencing huge food shortages, humanitarian crises, and most importantly, extreme civil violence. South Sudan is mired in a civil war. Somalia is controlled by warlords and terror organizations. Syria has both of those problems. Conflict has turned these countries into “breeding grounds of instability, mass migration, and murder” rather than sovereign states with a monopoly on violence and control over their borders (Rotberg, 2002). To be sure, failing states are a concern because of their ability to destabilize entire regions, but states at risk for failure are also very important. Countries like Pakistan that are politically unstable and have food and water shortages could result in uncontrollable civil upheaval (The Fund for Peace, 2016). Global Consequences of State Failure Failing states and destabilized regions are not just a problem for the developing world. They are a very real concern for the United States and other developed countries as well. The Islamic State fed off of the Syrian Civil War and helped destabilize Iraq, Syria, Libya, and even Afghanistan and the Philippines. They have at also inspired terror attacks in Europe and the United States. They are a threat to both the developed and developing world. State instability allows them to recruit and train without government interference, which in turn allows them to plan attacks outside the region. An important source of income for the Islamic State has been agriculture from Iraq and Syria. While this revenue has received less media attention than oil extraction, it is still an important part of their economy (Jaafar & Woertz, 2016). It is also a key aspect of their political legitimacy because it allows them to feed their soldiers and those they control. Controlling some of the most fertile regions of the two countries has also helped the Islamic State starve off areas that have resisted them (Jaafar & Woertz, 2016). If Syria or Iraq are ever going to stabilize, those breadbaskets must be retaken and the food must reach the civilians in the cut off areas. In the 20th century, state failure had few implications for international peace and security. Thanks to globalization, that is no longer the case. Failed states pose a threat to themselves, their neighbors, and the entire international community (Rotberg, 2002). Islamic State - inspired terror attacks in Belgium and France are a direct result of state collapse in Syria and Iraq. Preventing states from failing, rather than having to intervene militarily when they do, ought to be a top priority in the foreign policy of rich nations. Although the situations in Syria, Somalia, and South Sudan seem beyond repair, nation-building projects have had success in the past. Tajikistan, Lebanon, Cambodia, Kosovo and East Timor are all examples of relatively successful attempts to put failing states back on the right track (Rotberg, 2002). Developed countries must have the political will to ensure that people in developing countries are fed so that they remain pacified. It is often severe food insecurity that precedes ethnic or religious violence, as has been the case in South Sudan, therefore, adequate food is paramount to avoiding humanitarian crises that accompany ethnic and sectarian conflict (The Economist, 2016). While it is true that many developed countries, especially the United States, are weary of providing so much financial aid and intervening militarily in war-torn, developing countries, it is imperative that the rich do not abandon the poor to a fate of internal destruction. Money must not be thrown blindly towards humanitarian crises and military intervention must be the last resort. Developed countries provided $1.4 billion for humanitarian aid in South Sudan in its first year of independence, but without specific conditions, that money went to kleptocrats rather than infrastructure projects or public services (The Economist, 2016). Paying to help developing nations is expensive and will continue to be so. Afghanistan and Iraq are proof of that. But the war on terror, repeated military intervention, and humanitarian aid are expensive as well. In 2002, Robert Rotberg suggested that a new Marshall Plan was required for places like Afghanistan, the DRC, Sierra Leone, Somalia, and Sudan. If it is true that food and water security are the keys to keeping relative peace in new and developing countries and their collapse threatens the safety of the developed world, it seems logical that assisting those countries is wise. In 1999, Susan L. Woodward argued that military leaders focus too much on force versus force combat rather than the issues of insurgency and terrorism in failed states. In 2017, military leaders have adjusted their strategies accordingly. Woodward believed that globalization made states less important, but their failure would still be felt around the world. Failed states cannot exercise their monopoly on violence and they cannot control their borders, thus threatening more than just the failed state (Woodward, 1999). Because state failure is so consequential, the United States military must continue to look into measures it can take to prevent it. The Threat of the Future Finally, the threats from food shortages in South Sudan, Somalia, Afghanistan, Iraq, and Syria are important to the United States and the international community at large, but there is one country that, while it is not a failing state right now, could easily become one if the wealthy nations of the world do not ensure its stability. That country is Pakistan. The Fund for Peace ranked Pakistan as the 14th most fragile state in the world in 2016, giving it a “High Alert” designation for state failure (The Fund for Peace, 2016). Its Demographic Pressure Indicator was an 8.9 - 10.2 Although it improved by one-tenth of a point last year, its decade trend is worse by seven-tenths of a point and its five-year trend is worse by four-tenths of a point, suggesting that the food situation is actually worsening overall (The Fund for Peace, 2016). If internal conflict and potential state failure at its most basic level begins with food and water insecurity, then Pakistan could become a real problem very soon. Considering the risk of state failure, Pakistan poses the greatest threat to the rest of the world because of the existence of nuclear weapons within the country. Pakistan is not a member of the Nuclear Non-Proliferation Treaty, yet it has about 120 nuclear weapons. It also has a Shaheen 1A ballistic missile that can reach targets 550 miles away (Pakistan Defence, 2015). Should a food crisis arise in Pakistan that results in civil war and governmental collapse, those weapons could end up in the hands of a group that intends to use them maliciously as an act of terror. That prospect should be incentive enough for the developed countries to realize that they cannot and must not leave food insecure countries to devour themselves. While it is difficult to argue that food insecurity immediately and directly causes civil conflict, there is no denying that people need food and water and will fight to survive. In South Sudan, ethnic and political armies fight one another. In Syria, rebels and government forces fight each other while also fighting the Islamic State. And in Somalia, warlords and their armies fight. The Syrian Civil War began six years ago after a water shortage forced thousands of migrants into urban centers. Developing countries tend to be most affected by climate change, poor governance, and food price increases. Therefore, they are the most prone to instability that may lead to outright violence. Without the wherewithal to handle civil conflict, these countries may become fragile or even failing states. Once that happens, they represent a threat not just in their region of influence, but the whole world. That is why the developed Western nations must pay attention and provide aid to the developing world in order to maintain stability. There will be more food crises in developing countries in the future, but if the North has the strength to continue aiding the South, perhaps it will be able to curb mass starvation and avoid the horrendous violence that consumes starving countries.

#### Extinction.

PND 16. internally citing Zbigniew Brzezinski, Council of Foreign Relations and former national security adviser to President Carter, Toon and Robock’s 2012 study on nuclear winter in the Bulletin of Atomic Scientists, Gareth Evans’ International Commission on Nuclear Non-proliferation and Disarmament Report, Congressional EMP studies, studies on nuclear winter by Seth Baum of the Global Catastrophic Risk Institute and Martin Hellman of Stanford University, and U.S. and Russian former Defense Secretaries and former heads of nuclear missile forces, brief submitted to the United Nations General Assembly, Open-Ended Working Group on nuclear risks. A/AC.286/NGO/13. 05-03-2016. <http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/OEWG/2016/Documents/NGO13.pdf> //Re-cut by Elmer

Consequences human survival 12. Even if the 'other' side does NOT launch in response the smoke from 'their' burning cities (incinerated by 'us') will still make 'our' country (and the rest of the world) uninhabitable, potentially inducing global famine lasting up to decades. Toon and Robock note in ‘Self Assured Destruction’, in the Bulletin of Atomic Scientists 68/5, 2012, that: 13. “A nuclear war between Russia and the United States, even after the arsenal reductions planned under New START, could produce a nuclear winter. Hence, an attack by either side could be suicidal, resulting in self assured destruction. Even a 'small' nuclear war between India and Pakistan, with each country detonating 50 Hiroshima-size atom bombs--only about 0.03 percent of the global nuclear arsenal's explosive power--as air bursts in urban areas, could produce so much smoke that temperatures would fall below those of the Little Ice Age of the fourteenth to nineteenth centuries, shortening the growing season around the world and threatening the global food supply. Furthermore, there would be massive ozone depletion, allowing more ultraviolet radiation to reach Earth's surface. Recent studies predict that agricultural production in parts of the United States and China would decline by about **20 percent** for four years, and by 10 percent for a decade.” 14. A conflagration involving USA/NATO forces and those of Russian federation would most likely cause the deaths of most/nearly all/all humans (and severely impact/extinguish other species) as well as destroying the delicate interwoven techno-structure on which latter-day 'civilization' has come to depend. Temperatures would drop to below those of the last ice-age for up to 30 years as a result of the lofting of up to 180 million tonnes of very black soot into the stratosphere where it would remain for decades. 15. Though human ingenuity and resilience shouldn't be underestimated, human survival itself is arguably problematic, to put it mildly, under a 2000+ warhead USA/Russian federation scenario. 16. The Joint Statement on Catastrophic Humanitarian Consequences signed October 2013 by 146 governments mentioned 'Human Survival' no less than 5 times. The most recent (December 2014) one gives it a highly prominent place. Gareth Evans’ ICNND (International Commission on Nuclear Non-proliferation and Disarmament) Report made it clear that it saw the threat posed by nuclear weapons use as one that at least threatens what we now call 'civilization' and that potentially threatens human survival with an immediacy that even climate change does not, though we can see the results of climate change here and now and of course the immediate post-nuclear results for Hiroshima and Nagasaki as well.

#### Plan solves – IPRs are the key facilitator of biopiracy BUT challenging patenting is reverse causal.

Mehta 8 [Harish Mehta (reporter for the IATP. “New recruits in the battle against biopirates”. Institute for Agricultural and Trade Policy. Feb 7, 2008. Accessed 8/25/21. <https://www.iatp.org/news/new-recruits-in-the-battle-against-biopirates> //Xu+Elmer]

But it remains only a warning because there is nothing to prevent an individual or company from taking a patent on traditional knowledge or any biological resource of developing countries. As a result, any nation with any claim to traditional knowledge in anything faces the danger of having its biological resources stolen. Many scholars, environmentalists and lawyers believe that biopiracy has thrived because of vagueness in the United States patent law, especially as it relates to traditional knowledge held by indigenous people and developing countries. Scholars argue the US patent law allows US companies and individuals to take what does not belong to them. Because US law does not recognise or protect the 'prior art' of other countries, biopiracy has been given carte blanche. Developing countries such as India and Thailand have suffered because Western firms managed to patent basmati and jasmine rice, neem and turmeric. The US government subsequently revoked patents on certain uses of neem and turmeric only when India challenged the issuance of those patents, a long and costly process for poor countries. Scholars argue that Article 102 of the US Patent Law rejects technologies and methods used in other countries as 'prior art'. Evidence of ancient and traditional knowledge owned by indigenous peoples and nations is always routinely rejected. Therefore, a review and amendment of Trips should start with rigorous scrutiny of the weaknesses of the US intellectual property rights system. There is far too much at stake for the developing countries and the LDCs to do anything less. Indeed, a report prepared for the United Nations Development Programme in 1994 said that if developing countries were compensated a mere 2 per cent in royalties for global seed industry sales of $15US billion, and 20 per cent for pharmaceutical products derived from developing countries' plants, they would be owed an estimated $5US.4 billion by the developed countries. It is anyone's guess what the royalties would be currently. Clearly, it would be far more. Thus a revision of the Trips regime is of utmost importance because an estimated 90 per cent of the earth's biological resources is located in Africa, Asia and South America. Indigenous communities that have developed and nurtured such crops and plants for food and medicine are not being compensated for the material and knowledge that is taken from them. It must be hoped that the combined influence of the developing countries and the LDCs may succeed in effecting much needed reform to colonial-era attitudes among the rich nations.

#### Reject Negative Turns – there is a distinction between bioprospecting and biopiracy – the Plan shifts to bioprospecting which is good.

Mackey and Lian 12 Mackey, Tim K., and Bryan A. Liang. "Integrating biodiversity management and indigenous biopiracy protection to promote environmental justice and global health." American journal of public health 102.6 (2012): 1091-1095. (Associate Professor at University of California, San Diego School of Medicine)//Elmer

BIOMEDICAL RESEARCH AND the **discovery and development of medicines** often **focus on naturally occurring materials** for products and applications. **Searching** for such compounds in diverse environments (e.g., rainforests, deserts, and hot springs) **is deemed “bioprospecting**.”1,2 Bioprospecting has **resulted in key advances** (e.g., making polymerase chain reaction processes stable for medical application) **and has led to life-saving advances in medicines** and population health.1 It has also established economic value for these resources and supported biodiversity conservation and indigenous communities.2 However, **biopiracy occurs when bioprospecting is used to appropriate knowledge and biodiversity resources to gain exclusive use through** intellectual property rights (**IPRs**) **without benefits for indigenous populations**.2,3 In addition to raising serious environmental justice issues, **biopiracy** **adversely affects the health of local populations that** **fail to benefit from economic and medical gains** derived from the biodiversity and indigenous knowledge that originated in their communities. The **global health consequences** of biopiracy include **lack of access to medicines,** **failure to compensate for** valuable **traditional knowledge**, and **depletion of biodiversity resources** that are **needed** by indigenous communities **for their own ethnomedicine** and health care. These impacts are particularly problematic because the health of these communities can be poor.4 **Because of** the **global nature of** bioprospecting, **biopiracy**, and biodiversity, **effective management**—including environmental protection and sustainable development approaches—**may be best performed through global governance.** Global governance, however, has been ineffective in protecting biodiversity from biopiracy. Global IPR rules comprise domestic, multilateral, and supranational systems that establish minimum intellectual property standards. These global IPR systems focus on patent systems and private economic development under the World Trade Organization (WTO) TRIPS regime (Agreement on Trade-Related Aspects of Intellectual Property Rights) and on activities of the World Intellectual Property Organization. However, they have failed to protect indigenous rights, promote access to life-saving drugs, prevent biopiracy, or provide for responsible biodiversity development.5–9 Governance relies on market forces and state entities of independent governments within a defined territory, which preclude the participation and protection of indigenous communities (both in developed and developing countries) that comprise groups of diverse social self-identification. This traditional state-focused governance model has not created incentives for developing countries to invest in adequate conservation, and thus, biodiversity resources in these countries are in danger of being depleted.4,6 In response, in October 2010, the UN Convention on Biodiversity adopted the Nagoya Protocol, which attempts to protect biodiversity and sets rules on how nations access and share biodiversity benefits.10 It successfully introduces key components of resource sharing of biodiversity benefits by establishing a framework for norms and rules that may be implemented by member states in the future. However, the protocol does not adequately address several concerns, including the following: a forum for indigenous peoples to adjudicate biopiracy claims, strong penalties to create disincentives for biopiracy, ensured indigenous access to developed drugs, promotion of the planning and implementation of sustainable biodiversity conservation and investment in public health infrastructures in developing countries, and adequate promotion of public–private partnerships (PPPs) that can leverage resources from both public and private stakeholders. We therefore propose a policy employing a joint health–economics committee, a World Health Organization (WHO)–WTO Joint Committee on Bioprospecting and Biopiracy, to address these equity issues and promote sustainable and responsible global governance in biodiversity management.

1. The salivary hormone of the ‘Gila Monster’ is under development to regulate insulin production in diabetes patients, the salivary substance of the ‘Vampire Bat’ may be used to treat blood clots in stroke victims, the protein found in the venom of the ‘Giant Scorpion’ could be utilised as a smart bomb that seeks out brain tumours, the poison of the ‘Puffer Fish’ (a marine organism) may ease the pain of heroine withdrawal and cancer, the molecules in the saliva of the ‘Medicinal Leech’ are known to reduce the risk of blood clotting in some surgeries and the poisonous skin secretions of the ‘Poison-Dart Frog’ may assist with pain management evading morphine’s addiction risk. (Arlene Weintraub, ‘*Medicine’s Wild Kingdom: Potent chemicals derived from exotic animals are yielding a range of treatments*’, Business Week, 3 February 2003). [↑](#footnote-ref-1)