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The Export of Ecological Civilization: Reflections from Law and Economics and Law and Development

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Received: 5 October 2020; Accepted: 9 December 2020; Published: 12 December 2020



Abstract: This paper uses the concept of ecological civilization (EC) that has been developed within China and is now promoted within the framework of the Belt and Road Initiative (BRI). The paper critically examines the suitability of China's environmental law as an export product and uses the law and economics literature to formulate some critical observations with respect to the suitability of Chinese environmental law as an export product. Law and economics are also used to analyze the Environmental Kuznets Curve (EKC) literature, arguing that the reduction of environmental pollution will only occur with an increase in regulatory and institutional structures. Then, the law and development literature is employed to critically analyze the so-called legal transplants phenomenon, whereby particular legal rules from a donor country are transplanted to a host country. That literature argues that transplants may lead to rejection if they are not demand-driven and do not take into account local needs. The paper therefore concludes with some implications for the idea of transplanting the concept of EC along the BRI.

Keywords: Environmental Kuznets Curve (EKC); Belt and Road Initiative (BRI); law and economics; law and development; legal transplants

1. Introduction

The concept of ecological civilization (EC), developed over a period of years within China, has now been put forward by the Chinese leadership within the framework of the so-called Belt and Road Initiative (BRI). The EC concept is a rather vague notion translated as a conservation culture or ecological progress referring to the need to develop an energy- and resource-efficient, environmentally friendly structure of industries in China [1]. The BRI is primarily a project to develop a large infrastructure along spatial corridors linking China with various regions of Eurasia, motivated by geostrategic and economic development priorities [2]. This combination of the notion of EC within the BRI has several interesting aspects. One is that it provides an alternative discourse for sustainable development within China itself [3]; the other is a rather external perspective, as the EC concept also implies the export of Chinese environmental standards to the extent that the standards in host countries would be lower than those in China. Some international stakeholders are even urging China to assist BRI host countries to improve pollution technologies, to help them meet their respective commitments under the Paris Agreement and the sustainable development goals (SDGs) [4]. China has even explicitly, in a response to criticism on the potentially polluting effects of the BRI, responded in 2017 with the BRI Ecological and Environmental Cooperation Plan, which refers to ecological civilization [5]. It is particularly with respect to the latter aspect of EC that I would like to present several reflections, not so much to either criticize or analyze the current strategies within the BRI, but rather to put this in a broader

framework of the relationship between economic development and environmental protection, and the role of environmental standards in that respect. It will simply be argued that that literature may have considerations that could be valuable for some of the “export” aspects of EC.

It is as yet not totally clear what is exactly meant with this concept of ecological civilization [6], neither is it totally clear how the concept of ecological civilization relates to the BRI. One aspect of the BRI is that it may lead to impressive infrastructure projects in countries along the road, which could potentially have ecological impacts [2,7]. The concept of ecological civilization could potentially guide Chinese investors in their decision-making along the road. However, the concept of ecological civilization could also play a role where environmental standards in host countries are lower than those of China. It has been argued that ideally the concept of ecological civilization could lead to increasing environmental standards in host countries, as the joint responsibility of the Chinese entities and their host country counterparts [8]. It is especially on this latter aspect that this contribution wants to focus, realizing that the BRI undoubtedly has many other aspects that are worth examining, such as the question whether (international) norms and principles, for example, the application of environmental impact assessments (EIAs), will also apply to projects along the BRI. The aspect I want to focus on in this contribution is the potential transnational application of (Chinese) environmental standards to projects along the BRI. Several streams of literature are of interest in this respect.

One relevant body of literature deals with the relationship between economic development and preferences for environmental protection. It is often argued that developing countries have, at least in the initial stages of economic development, a lower demand for environmental protection. That may lead to a situation where, at least in the beginning of economic development, environmental quality decreases. That leads to the first question of whether, in that respect, the preferences of the host states should be respected or whether the transition to a green economy should be pushed through even if that would not necessarily correspond with the preferences in the host state. The issue is closely related to the so called Environmental Kuznets Curve literature, indicating that the relationship between economic development and environmental quality shows an inverted U-curve: after initial pollution levels increase with growing Gross Domestic Product (GDP) levels, at some point increasing GDP leads to a lowering of pollution levels. However, studies by Esty and Porter have indicated that it is not economic growth as such that causes pollution levels to go down, but rather the fact that increasing GDP levels go hand in hand with improving governance structures in a particular country, including the quality of environmental law.

That has led to a movement to transplant best practices concerning environmental standards to developing countries, and in that sense the current idea to export EC fits within such a strategy, long undertaken on the one hand by former colonialists towards their ex-colonies, but also by international institutions, such as the World Bank and the International Monetary Fund (IMF), which have often imposed particular models of environmental standards upon developing countries as conditions for financing. It is the well-known concept of “legal transplants”. Empirical evidence concerning the success of those transplants is mixed. Especially the “law and development” literature has been very critical, in which it is argued that these transplants are often based on a “theory of lack” and were found to be offensive and humiliating, leading to a rejection by the host state. The law and development literature points to the sources for the failure of many legal transplants, but equally indicates under which type of conditions legal transplants can be successful, for example, if they are demand-driven and fit into the institutional and cultural legal context within the host country.

Similar lessons equally come from recent law and economics literature [9–12], in which it has been argued that the type of environmental governance instruments that may be optimal for the developed world (and from a theoretical perspective) may not necessarily work in developing countries where the same conditions (concerning the absence of collusion and sufficient human capital within administrations) may not necessarily be present.

To an important extent, the current documents concerning the BRI seem to take into account some of the lessons of that literature concerning, for example, inclusive and transparent stakeholder

consultations [8]. Yet, in this paper, I will proceed to a more general review of that literature, as to some extent the export of the concept of EC may apply to countries with a lower development level than China, and this raises many of the abovementioned questions. Both the law and development and law and economics literature include considerations that could inspire the debate, indicating under which particular conditions such an initiative might indeed lead to improving environmental quality in the countries along the BRI, which seems to be the narrative of the Chinese leadership.

The paper will be structured as follows: after this introduction (Section 1), the fundamental question will be asked of to what extent China's environmental law can be considered as a desirable export product (Section 2); next, the mentioned economic literature concerning the relationship between environmental standards and preferences will be sketched (Section 3), as well as the literature related to the Environmental Kuznets Curve (Section 4). Section 5 deals with the desirability of legal transplants from a law and development perspective and Section 6 presents recent insights concerning legal transplants from a law and economics perspective. Section 7 analyzes the consequences of this literature for the desirability of exporting the concept of "ecological civilization". Section 8 concludes.

2. China's Environmental Law as an Export Product

Even though there are still many uncertainties, both concerning the precise meaning of the concept of ecological civilization [1], as well as concerning the impact of "ecological civilization" on the BRI, I focus on the question of whether ecological civilization in the BRI could imply that Chinese standards could (or should) be imposed on projects along the BRI if the host countries might hypothetically have lower environmental standards than China. I have to stress that even though some literature speculates that this may be a consequence of applying ecological civilization to the BRI, there are still many uncertainties concerning the precise interpretation, as a result of which it is not sure how the concept will precisely be applied in practice. The question I will address as a starting point concerns the extent to which current substantive environmental law (law in the books) in China can be considered as a desirable export product [1]. Of course the concept of ecological civilization is potentially much broader than environmental law, even though Barresi rightly stresses the role of law in building the ecological civilization. China now has an impressive body of environmental law. The Chinese legislator has made "a great leap forward" as far as the development of environmental law is concerned [13], and especially the 2015 reform of the Environmental Protection Law in China in principle allows for an adequate protection and increased environmental quality. However, authors also agree that even though the scope of the legislative framework concerning environmental policy in China has gone through important changes, the practical application, in other words, the "law in action", still remains an important problem. Barresi points at the compliance and enforcement problems with which environmental law has been plagued in China [1]. Many obstacles to the implementation of environmental law in China have not been fully addressed and resolved. Old problems, such as the lack of capacity within China's bureaucracies and legal institutions, have still not been adequately addressed [14].

There are equally many empirical studies that show that the environmental challenges in China remain large, notwithstanding the legislative framework [15]. Note, however, that many of the empirical studies that report on the problematic state of the environment in China date from before the most recent legislative changes. It is beyond the scope of this short article to discuss these studies in detail, but the environmental problems with which China is faced have been well documented. China is still confronted with life-threatening air pollution. Air quality in most Chinese cities still exceeds the standards recommended by the World Health Organization [16,17]. The main contributor to smog in China is PM_{2.5}. Recent studies have found that China is among the regions with the highest concentration of PM_{2.5} [18] and the level of PM_{2.5} concentration has significantly increased in most Chinese provinces between 2001–2003 and 2008–2010 [19]. Ma et al. estimated the daily PM_{2.5} concentrations in China with fused satellite aerosol optical depth (AOD) as the primary predictor and found that over ninety-six percent of the Chinese population lives in areas that exceed the

Chinese National Ambient Air Quality Standard Level 2 standard (annual mean concentration of PM_{2.5} being 35 µg/m³) [20]. A report issued by Greenpeace concludes that “The microscopic PM_{2.5} particles penetrate deep into the lungs, and further into the bloodstream, causing inflammation, respiratory problems, coagulation of blood and toxic effects on many internal organs, including the brain. The result is increased risk of death from heart attack, stroke, lung cancer and respiratory diseases, and increased risk of asthma and respiratory infections” [21]. The growing trend of NO_x emissions is also worrisome. It is a consequence of the construction of new power plants, the rapid increase of vehicles and a lack of NO₂ emission control measures. NO_x emissions have increased from 11 million tons in 1995 to 26.1 million tons in 2010 [22].

Similar pessimistic stories equally appear from studies with respect to water pollution, where the situation is potentially even worse. In the words of Richard Smith, “If the air is bad, the water is far worse” [23]. The 2013 State of the Environment Report issued by the Ministry of Environmental Protection (MEP) shows that the surface water quality in the main rivers in China has further deteriorated [24]. Similar reports on bad water quality equally relate to the groundwater: 90% of China’s shallow groundwater is polluted. A report issued by the Ministry of Land and Resources in 2014 shows that among the 4778 spots in 203 cities monitored by the Ministry of Land and Resources, underground water quality is ranked “relatively poor” in 43.9% and “very poor” in another 15.7%. According to China’s underground water standards, water of relatively poor quality can be used for drinking only after proper treatment. Water of very poor quality cannot be used as a source of drinking water. The report further shows that, on a year-by-year basis, the water quality has worsened in 754 monitored spots and has improved in only 647 areas [25–27].

In the literature, several causes of this environmental disaster are indicated. One important cause is bureaucratic politics, more particularly conflicts between the environmental ministry, non-environmental ministries and local governments who are more concerned with economic growth, industrial development and increasing fiscal revenue than with environmental quality. Attempts to strengthen environmental legislation in China often have been met with strong opposition from politically powerful actors within the government [28,29]. As a second reason, the weakness of the court system and the limited access to justice are mentioned. Courts in China are renowned for their lack of independence from political interference [30,31]. Courts are also reluctant to accept cases brought by ordinary citizens against the government. In practice, cases may be refused by the Court for a number of reasons, in some cases simply because the case is politically sensitive [32]. It is therefore unsurprising that the literature concludes that the courts only play a marginal role in China’s environmental governance [33]. Public and private enforcement are therefore generally considered weak and access to justice is problematic. Victims in China still are confronted with many barriers to access justice [34]. The public enforcement system is improving, but generally still considered weak [35]. One of the reasons for the weak enforcement relates to the under-financing of local regulatory agencies [36]. Local MEP branches depend on local governments for their funding, which also approve promotions and allocate resources and personnel, making them financially vulnerable [37–39]. As far as the implementation of the concept of eco-civilization is concerned, it also has been shown that although this concept drives conceptual thinking on sustainable urban development in China, in practice a systematic implementation gap appears to exist at the level of local implementation [3]. Capital accumulation in the mechanisms for urban development and power accumulation in the mechanisms underlying the administrative process are indicated as the main causes of this mismatch [3].

In sum, law enforcement in China seems to be improving, but is still very problematic for several reasons: first, there is a strong focus on an investment-based growth of China’s economy. The strong focus on economic growth and the investment-driven growth pattern has had catastrophic consequences for the environment [40]. A second related issue is that the “growth first” ideology is combined with a lack of political rewards for environmental protection for subnational government officials. Evidence shows that local officials are rewarded (for example by being promoted to a higher rank) for achieving hard targets, such as GDP growth and tax revenue, but not for fulfilling soft

targets, such as improving environmental quality [41]. Finally, powers for environmental policy have been decentralized, but this decentralization is not generally accompanied by the appropriate budget. A report issued by the OECD [42] concludes that “Capital spending and public administration takes a large and, until recently, increasing share of China’s overall public spending”. Other reports show that China’s public spending on social protection and health as a share of GDP is significantly below average levels for OECD and upper-middle-income countries [43]. The local governments have to rely largely on transfers from the central government to finance their operations. However, those transfers are not sufficient to finance local governments’ public services, such as environmental protection. Barresi also indicated that China’s environmental laws depend for their enforcement upon local environmental protection bureaus, who are for their funding mostly dependent upon local governments [1].

As already indicated, ecological civilization is undoubtedly more than environmental law and some of the problems indicated in the literature are partially based on studies reviewing environmental quality in China several years ago. Meanwhile important steps have been taken to improve legislation. However, some of the fundamental causes explaining the failure of environmental law in China have not been removed as a result of which it still remains to be seen whether the recent legislative changes will allow a real improvement in environmental quality.

As for the question of whether China’s environmental law could be considered an appropriate export product, this brief review of some literature shows that, when focusing on environmental law in host countries along the BRI, it is not sufficient merely to focus on the quality of substantive environmental law, but that attention should equally be paid to practical implementation and enforcement.

3. Environmental Standards and Preferences

The law and economics literature argues that the demand for environmental protection within a particular country or region will be dependent upon the preferences of the population, and those preferences can be linked to the level of development within the particular country or region. In that sense there is a relationship between economic growth and income levels within a country and the demand for environmental protection [44]. In developing countries where poverty still reigns, the satisfaction of primary needs (food security, healthcare, basic income) can be considered as a primary need, which may explain a focus on economic development [45]. The preferences for a particular environmental quality within a country or region may well therefore depend upon the level of economic development in that country. As a consequence, environmental quality standards, i.e., the standards that determine the desirable environmental quality to be reached in a country [46], should also be differentiated, taking into account individual preferences of the citizens in the particular country or region [46].

Cooter and Schäfer developed a similar logic concerning safety levels in developing countries. They refer to the subjective values that individuals place on their own risk, including the risk of death. Individuals in developing countries value life lower than in the developed world [47]. As a result, poor people spent less on their own safety than rich people. Thus, the laws in poor countries will, so Cooter and Schäfer hold, cause people to spend less on the safety of others than the laws in rich countries. Environmental standards will therefore be substantially lower in poor countries as compared to rich countries [48].

The problem with this literature is obviously that it assumes that regulation adequately reflects the preferences of citizens. Public choice literature has rightly pointed out that regulation is often the result of the demand by rent-seeking interest groups and the supply by wealth-maximizing politicians [49]. The result is, also in the environmental domain, that environmental law often does not correspond at all with the preferences of the citizens [50]. Institutions in bureaucratic systems will often prevent (environmental) regulation from corresponding with the preferences of the citizens [51].

Notwithstanding these limits concerning the strong assumptions of the law and economics literature (that environmental standards would correspond with preferences), one interesting

implication is that it is not possible to define something like one “optimal” environmental standard that would apply across all countries or regions. Given the relationship between economic development and the corresponding preferences for environmental protection, differing preferences and demands should be taken into account. This may have important consequences for the desired level of environmental quality in particular countries or regions. Some of the host countries along the BRI may be in a lower level of economic development than China and may have preferences for different (presumably lower) environmental quality standards than China. Given this relationship between economic development and the preferences for environmental protection, these differing local preferences and demands should be respected. As a consequence, the mere fact that in a host country lower environmental quality would be established, should not be an argument to impose the (presumably higher) environmental quality standards from China as long as the quality standards applicable in the host country correspond to the preferences of the citizens. Given the public choice effects that may affect the quality of environmental regulation, it is certainly doubtful that local regulations would correspond with the preferences of the citizens, but that does not imply that Chinese standards would in that respect necessarily be better. This basic insight concerning the relationship between economic development and environmental protection has also led to literature known as the Environmental Kuznets Curve literature.

4. Environmental Kuznets-Curve

The concept of the Environmental Kuznets Curve (EKC) (see Figure 1) is named after the earlier work of Nobel prize winner Simon Kuznets. Kuznets originally examined the relationship in specific countries between income inequality and income levels [52]. At the end of the past century, this idea was also applied in order to examine the relationship between economic development and environmental quality. The so-called EKC points to a relationship between the gross domestic product (GDP) in a particular country and environmental pollution [44,53]. The EKC literature points at an inverted u-curve. This implies that when a particular country starts economic growth and income levels are low, the increase in income levels first leads to an increase in environmental pollution. There is, however, a particular point (which is represented by the top of the inverted u-curve) where an increase in GDP no longer leads to more pollution, but to higher environmental quality. In that second phase, an increase in income levels therefore leads to improved environmental quality. This is shown in the following curve:

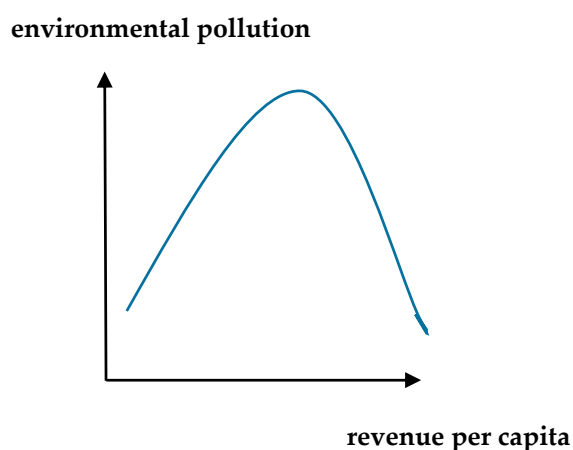


Figure 1. Environmental Kuznets Curve.

The empirical studies on this EKC curve have also gained importance at the policy level through the World Bank as the World Bank mentioned the EKC literature in its World Development Report 1992. A policy conclusion that was derived from this literature was that especially developing countries would have an interest in focusing on developing economic growth, assuming that this

would eventually also lead to lower pollution levels. One of the authors of the 1992 World Development Report of the World Bank, Beckerman [45], stated in that respect: “it is fairly clear that the best way to improve the environment of the vast mass of the world’s population is to enable them to maintain economic growth” and “the strong correlation between incomes and the extent to which environmental protection measures are adopted demonstrates that, in the long run, the surest way to improve your environment is to become rich” [45].

There may be several reasons that could explain the EKC, in other words, why at some point a higher GDP in a particular country would lead to an increase in environmental quality [54]. First, when in a particular country’s GDP increases, the economy may rely less on (polluting) manufacturing by industry, turning to a (less polluting) economy based on services; second, the increase in income levels can equally lead to technological innovation and a better use of primary materials and energy. This finding relates to the research by Michael Porter, who argued that investments in environmental protection by a firm would not necessarily lead to a reduction in profitability. Porter held that both companies and countries can benefit from investments in environmental protection [55]. This “Porter hypothesis” argues that efforts to increase environmental performance at the firm level necessitate innovation, which leads to both increased environmental performance and higher profitability. The Porter hypothesis also received some empirical support [56]. Third, the increase in GDP in a country may equally lead to different preferences of the citizens: once a certain level of economic development has been achieved (and poverty has been eliminated) the citizens may also demand higher environmental quality. Arrow et al. formulate this as follows “People spend proportionally more on environmental quality as their income increases” [57]. Finally, there is always a risk that when nations have reached a particular level of development, they would shift their polluting industries (and corresponding emissions) to developing countries. Sun et al. argue that this may also occur along the BRI, thus supporting the pollution haven hypothesis [58].

There is empirical evidence to support the EKC, but the evidence does not provide an unequivocal result [59]. The EKC has been studied *inter alia* for Latin America by Cansino et al. [60] and Jimenez et al. [61], but also for China [62], as the question obviously arises of whether China has already reached the tipping point where higher income levels reduce pollution levels. There is some empirical evidence to support that hypothesis, but it strongly depends upon the type of pollutants involved [62,63]. According to Chen et al., the EKC pattern may not be valid for situations involving the most damaging pollution [64].

It is not so clear what the lessons are from the EKC literature for environmental policy. Concerning the World Bank approach, mentioned earlier, this showed there is a danger that one would (wrongly) derive from this literature that a country can achieve higher environmental quality simply by promoting economic development. Such a vision was, however, qualified by Ayres as “false and pernicious nonsense” [65]. It is not economic growth that causes pollution levels to go down. Higher income levels do not automatically lead to lower pollution levels [57].

One important issue is that the EKC literature is certainly not one-dimensional. It does not apply for all pollutants. Moreover, there are important differences in environmental pollution levels between nations with comparable income levels. Those differences can hardly be explained by the EKC. The methodology and economic techniques of current EKC research have been questioned due to controversial empirical research [64]. Dan Esty and Michael Porter examined the relationship between GDP levels in a large number of countries and several indicators for environmental quality [66,67]. In addition, they also included parameters to examine the intensity of the institutional and regulatory regime in a country. They found that there is indeed a relationship between increasing income levels and better environmental performance, but that there is equally a relationship with the strength of the institutional and regulatory regime in the particular country [66,67]. In other words, they argue that it is not economic growth as such that correlates with improved environmental quality in a country, but rather the quality and intensity of environmental regulations as well as the enforcement. The conclusion from this important research is therefore that there may be a correlation between rising

income levels and improved environmental quality (as the EKC indicates), but that this relationship is particularly determined by institutional features, such as the respect for the rule of law and the quality of the governance structures in the particular country [67]. The research equally indicated that when countries introduced a more intensified institutional structure to control environmental pollution (in other words more stringent environmental law), this would only increase the income levels rather than reduce them [67].

The consequences of this important research are that it is especially the quality of institutional and governance structures (in other words environmental law) that determines the development of environmental quality. The EKC indicates a relationship between increasing income levels and lower pollution levels, but the research by Esty and Porter indicates that these pollution levels go down not as a result of increasing income levels as such, but as a result of an improved institutional and governance structure in the particular country [66,68]. This is also confirmed in a recent study by Rahman et al. [69], who argued that in Bangladesh, China, India and Myanmar environmental quality indicators improved over time thanks to strict regulations and technological improvements. This literature therefore fully supports the current developments in China whereby much more attention is given to the improvement of the quality of environmental legislation. Chinese leadership now relates the concept of ecological civilization to the Environmental Kuznets Curve, referring to a quote by Xi Jinping, stating that “Green waters and clear mountains” will provide “gold and silver haies” [6]. The EKC literature equally provides support for paying attention to the quality of environmental regulation (via the concept of ecological civilization or otherwise) in projects along the BRI. The clear lesson is that merely stimulating economic growth in those host countries will not automatically lead to improved environmental quality, but that the quality of environmental regulation matters as well. That then raises the question of what is adequate environmental regulation for developing countries.

5. Legal Transplants, Law and Development

Specific attention to the relation between the quality of the law and development in a particular country has been paid by the so-called law and development literature. This literature has serious doubts concerning the possibility for law to really reach economic development [12]. Much attention in that literature is paid to the fact that, especially in developing countries, informal alternatives to low pay often a more important role than formal legal rules. For example, with respect to China, specific research indicated that securing property rights and enforcing contracts were traditionally not the main purpose of law in Asian societies [70–72]. Law was rather an instrument to promote the interests of the state. Because the effects of law were often unpredictable, traders preferred to avoid formal contacts with the legal system. Instead, an informal mechanism governing the relationship between merchants developed next to the formal legal system. As this informal system lacked formal enforcement, it strongly relied upon trust between the merchants to make sure that economic exchanges could take place. Economic activities were therefore strongly based on social relations. It is referred to as “relational capitalism” and was relatively successful as a mechanism governing the relationship between business parties in Chinese communities in Southeast Asia in the past, and still is today [70]. This does not imply that informal law would under all circumstances be preferable to formal law. Informal law has a number of disadvantages as well. One limitation is obviously that if economic exchange is embedded within social relations, economic transactions will also be limited to the persons with whom social relations have been developed. Another problem is the succession, more particularly when assets have been concentrated within family companies. Informal law may equally be too static and difficult to change. Moreover, as informal law lacks a system of formal enforcement, there is a danger that alternative means of enforcement would be employed. This was for example the case in Russia [70,73]. It shows that systems of formal and informal law can also coexist [74]. There are, moreover, inter-dependencies between informal and formal law in governing social relations [75]. Informal law is de facto especially important in developing countries where traditionally a reliable

formal legal system was lacking. Taking account of such legal pluralism is particularly important in considering legal reform in (developing) host countries along the BRI.

One method to develop an institutional structure in developing countries is by importing legal rules from the North (de facto often from former colonies) and transplanting them to developing countries [76]. This is referred to as a system of legal transplants. The advantage is that it may allow developing countries to rely on best practices concerning particular legal rules. However, legal transplants are not always based on the demand from the developing countries concerned. Often countries in the North base a transplant on the fact that the developing country would lack particular legal rules that do exist in the North. It is referred to as the “theory of lack” [77]. An example of this is contained in the traditional idea that China lacked what was considered as a decent legal system, other than the criminal law [78]. The theory of lack starts from the idea of a cultural superiority of the legal system in the North and is therefore often considered as humiliating and offensive. That can also explain some of the resistance in developing countries against those legal transplants. Many transplanted rules therefore lacked effectiveness. An important condition for a legal rule to work, for example in the area of environmental norms, is to understand how local communities interact with their environment [12]. A legal transplant may work if the legal culture of the receiving developing country and of the legal system of the transplanted rule share some common basic norms [12]. The most important condition for a legal transplant to be effective is that it should be based on the demand from the developing country concerned, rather than being imposed from the North to the South [79]. Moreover, it may be necessary to adapt the transplanted rule to the specific conditions in the receiving developing country. That may allow the transplanted legal rule to function in an effective manner in the new legal culture [12].

Modern China has a long tradition of incorporating legal rules from other legal systems into Chinese law, yet at the same time adapting the transplanted rule to the specific needs of China. In that respect China seems to incorporate the lessons from the just-mentioned literature concerning the conditions for an effective use of legal transplants. For example, the Chinese Anti-Monopoly Law [80–83] has been strongly based on the European example [84]. China has been successful in applying transplanted rules as it has a utilitarian approach towards legal rules. In this respect Chen holds: “[S]ocialist ideology is upheld rhetorically, [but there is no] discussion [in transplants about] ‘Chinese characteristics’ [and] Chinese scholars [mainly] advocate[e the] direct copying of foreign law” [85]. In this respect, Chen quotes Seidman who states that legal “drafters can learn literally nothing from the black-letter texts of foreign law; they can only learn from studying the law and its social consequences in its country-specific setting” [86]. The strengths and weaknesses of the judiciary in China have also been studied by Zhang and Zhang [87] and Peerenboom [88]. As far as environmental law is concerned, China has also looked at Western environmental laws as sources for inspiration, with a mixed record of success [1]. Still, also in China questions are asked on whether, particularly in the environmental area, China has not blindly transplanted too easily legal rules from the West (US and Europe), whereby the question could be asked whether the transplanted legal rules were always fit for the Chinese legal tradition [1].

Again, this literature has potentially interesting policy consequences, both for environmental law within China itself and for the desirability of transplanting Chinese environmental law to host countries along the BRI. Those implications will be discussed in further detail below in Section 7.

6. Recent Insights from Law and Economics

The law and economics literature has to some extent the same starting point as law and development by stressing that much of the environmental law in developing countries was based on the application of legal rules from the former colonialists in the developing country concerned. The law and economics literature also stresses that for this reason those rules were not always adapted to the particular situation in the developing country, which led, not surprisingly, to poor environmental law and serious pollution problems in many countries [12]. To some extent this is blamed on a failure to implement environmental

law and on enforcement problems [89]. However, even though enforcement problems are certainly not denied, it is not considered the only reason for a lack of effectiveness of environmental regulation in developing countries. The structure of the environmental norms itself plays an equally important role [12]. There are several recent streams of literature within law and economics that have important lessons for the effectiveness of environmental regulation in developing countries. One important starting point is to take the institutional limits in developing countries into account when choosing a particular structure of environmental law [90]. In that respect the law and economics literature has addressed the situation when ex ante specified rules set by the legislator would be preferred in comparison to vaguer ex post standards developed either by the judiciary or by administrative agencies. This is known as the rules versus standards literature [91–94]. A standards-based system of environmental law uses vaguer standards developed ex post by the judiciary or by administrative agencies, whereas a rules-based mechanism relies on environmental norms to be developed by either the legislator or higher levels of the executive power.

Recent scholars have argued that a fundamental problem in developing countries is the lack of human capital. If the human resources required to apply vague standards was indeed lacking, a rule-based system might have particular advantages [11,75]. Generally, vague standards appear to have initially lower costs (as the desired behavior does not have to be specified in a large amount of detail). But at a later stage the vague standards need to be implemented and enforced and then they lead to higher costs. In countries with scarce human resources, a rule-based environmental law system has the advantage that the behavior required from the operators will be determined ex ante in a specific manner at the state level, no longer requiring further implementation at lower levels. The system would in other words rely on specific and detailed ex ante rules set by the legislator, which reduces the need to rely on a further implementation of vague standards by either the judiciary or lower administrative agencies [10]. In a context where there may not be an independent judiciary, capable of implementing vague standards, a rule-based mechanism also may have advantages. It is less vulnerable to the negative influence of corruption and lobbying efforts [75]. For that reason, it is also held that the common law system, which strongly relies on vague principles to be applied by the judiciary, may not be effective in developing countries [95].

A consequence of this literature for the development of environmental law is that when a country lacks human resources, particularly within administrative agencies, it would be wrong to create an environmental law that would need administrative agencies for its implementation. The case of Indonesia can illustrate this. The country issued several environmental management acts, which, for its effective implementation, needed executive orders. Those were, however, never issued as a result of which the legislation remained ineffective [96]. This illustrates the more general point that when a particular country lacks the human resources needed to implement central legislation, it may be more effective to structure environmental law in such a way that it is not dependent upon further implementation by administrative agencies.

A second type of literature in law and economics related to corruption proceeds in the same way. Corruption may seriously jeopardize the implementation of environmental law in developing countries. The first best solution is obviously to counter corruption and to enforce environmental regulation in an effective manner [97–99]. However, for decades, many people have already devoted a lot of time and effort to fight corruption within administrative agencies in developing countries. The results of those efforts have, however, been disappointing and corruption often continues to flourish [100]. If a country keeps relying on the fight against corruption, it may be difficult to reach an effective environmental law. For example, in Indonesia, it was shown that 18% of the rice that was meant for redistribution disappeared [101].

Another approach to corruption would be to recognize that in some developing countries corruption at various levels of governance is a serious issue and consequently to choose a design of environmental law that is less vulnerable to corruption. Ogus has argued that, as it is apparently difficult to ban corruption completely, it is better to design regulation that is less vulnerable to

corruption by particular civil servants [9,10]. Ogus equally builds upon the rules versus standards literature mentioned earlier, arguing that vague standards provide room for interpretation (and thus corruption) by particular civil servants within administrative agencies. He argues that the major advantage of precise rules is that it reduces the room for discretion by civil servants [10]. Posner also held that precise rules have the advantage that they allow a better control of judges and could equally reduce the danger of corruption [11,75]. “General rules may indeed be suitable to overcome . . . the capture problems—that is, the susceptibility of government agencies to lobbying enterprises—that result from decentralized standard setting” [96].

There is a third theme of the literature within law and economics, equally relevant to this topic, dealing with the question of whether environmental regulation should preferably be centralized or decentralized. Decentralized decision-making generally has the advantage of decision-making by the local authorities who have better information on the environmental problem at hand. Yet, a major disadvantage is that local authorities often have too close a relationship with local industry. A result may be that local authorities could be vulnerable to lobbying and corruption by the local industry. If that is the case, decision-making at the central level may have the advantage that those decision-makers are further away from the local interests, as a result of which decision-making in the public interest may be more likely. The public choice literature has indicated that large lobby groups will have relatively high transaction costs to organize whereas smaller lobby groups, which are single-issue oriented, will face lower transaction costs [102–105]. Research with respect to the effectiveness of environmental law, particularly in developing countries, has also shown that it may be very difficult for local authorities to issue environmental regulation in the public interest, even if they are not corrupt, simply because of the economic importance of the industry for the local community. So-called public choice distortions (in other words lobbying) may especially occur at lower levels of governance; which is also why they occur within federal systems that have in some cases been advanced as a reason for centralization [106,107]. Several studies have also indicated that, in practice, local elites in developing countries are often able to capture the local authorities, putting more vulnerable groups like fishermen and small farmers in a disadvantaged position. Those studies indicate that it would be to the advantage of those vulnerable groups to have decision-making at the central level whereby the central law can be enforced against the local lobby groups. It is for that reason that some studies have been critical of decentralization efforts concerning fisheries in Sub-Saharan Africa. It was argued that the decentralization did not improve the governance structure and changed the power distribution to the disadvantage of poor fishermen [108]. Another study showed that a change to decentralized decision-making concerning natural resource management in Mali de facto created a new local elite, undermining the existing customary institutions to the disadvantage of vulnerable groups [109]. As far as China is concerned, the literature indicates that important problems with the enforcement of environmental law occurred, especially after decentralization of administrative powers to the provinces [110]. As far as India is concerned, the effectiveness of so-called “participatory committees” in the domain of forest management was examined. The study led to the conclusion that the effectiveness did not depend upon devolution, but upon state accountability [111]. Several studies equally indicate that when there is a capturing of the local decision-makers by the elite, it is often to the detriment of the environment. A study concerning the well-known scheme of payment for ecosystem services in Costa Rica was considered successful. Yet, the beneficiaries of the payments were mostly the relatively wealthy farmers rather than the vulnerable groups [112].

These new insights concerning the effectiveness of environmental regulation in developing countries may have important policy consequences that will be addressed now.

7. Implications for Ecological Civilization along the BRI

Let me now try to summarize some of the lessons that could be learned perhaps for the concept ecological civilization generally, but especially for the central question to this contribution, which concerns the extent to which ecological civilization could also guide the actions of China in host

countries along the BRI. There are several potential lessons that could be drawn from this literature. Obviously the literature will not be repeated; instead I will focus on the main policy consequences.

7.1. Focus on Law in Action, Enforcement

A clear lesson from the brief overview of the state of the environment in China itself (see Section 2) is that it does not suffice to have a decent environmental law in place, but that it is equally important to focus on implementation and enforcement. The overview made clear that most scholars agree that China now has an up-to-standard environmental legal framework, but notwithstanding that it still suffers from major environmental issues, which are to a large extent due to structural problems regarding enforcement and implementation. That is an important conclusion regarding the possibilities for improving environmental quality in China itself, but equally for potential actions regarding environmental quality in host countries along the BRI. The lesson is that it would clearly not suffice (to the extent that it would be considered desirable) to focus merely on improving the quality of the environmental legislation in the host countries, but that it is equally important to focus on an adequate framework allowing the implementation of the formal rules.

7.2. Respecting Local Preferences and Demand

The related Sections 3 and 4 focused on the economic literature concerning the relationship between economic development and environmental quality. Given that many countries along the BRI may be developing countries, the question arises of the extent to which the presumably higher Chinese environmental quality standards should be imposed upon host countries. The general lesson from the economic literature is that, since environmental quality is crucially linked to economic development, it is important to respect the preferences for environmental quality in the host country. The extent to which the level of development in the host countries along the BRI is lower than in China, could lead to a demand for a lower level of environmental quality.

At the same time, the literature with respect to the EKC makes it clear that further economic development can eventually increase environmental quality, but only on the condition that this is accompanied with respect for the rule of law, adequate regulation and an appropriate institutional framework. The lesson from the EKC literature is therefore clear: if environmental quality is to be promoted in host countries along the BRI, focusing on promoting economic growth, it makes sense for it to be accompanied at the same time by a strengthening of the institutional environmental legal framework.

7.3. Law and Development

It has more particularly been the so-called law and development literature that has largely focused on the question of what then constitutes adequate environmental law, i.e., adapted to the specific needs of developing countries. An important part of the literature addresses the desirability of so-called “legal transplants”, i.e., transplantation of a legal rule from a donor to a host country. Starting from the empirical fact that many legal transplants were not a major success and often in fact led to a rejection of the transplanted rule, the literature stresses that probably the process of adapting the rule is more important than merely the focus on contents. A successful legal transplant should be user-driven and based on local demand and ownership. Crucial elements are the receptivity of the transplant within the existing legal culture in the host country as well as the familiarity of the host country with the transplanted rule. A related warning addresses the fact that in developing host countries, the institutional framework may often be different than in the donor country from which the transplanted rule originates. An issue of particular importance is the prevalence of informal law in developing countries and the resulting hybrid legal system whereby informal and formal laws are mixed. The literature therefore does not generally reject legal transplants, but simply sketches particular conditions that should be taken into account as determinants of successful transplants. This literature is certainly of relevance also for China itself where environmental law has, to a large extent, also been

based on legal transplants. Barresi questions the extent to which particular transplanted rules fit with China's own legal tradition [1]. However, the legal transplants literature is equally important for China's actions in host countries along the BRI: transplanting legal rules from China to host countries may work, but the specific conditions (such as the local demand, the transplant being user-driven and the way it fits into the legal culture of the host country) are important elements to be taken into account.

7.4. Lessons from Law and Economics

The recent law and economics scholarly literature presented in Section 6 may imply that the policy recommendations concerning optimal environmental law could be different for developing countries than for developed countries.

First, the lack of human capital (and capacity) in developing countries along the BRI may necessitate minimal reliance upon highly refined and elaborate environmental legal rules, which depend to a large extent for their effectiveness upon implementation by administrative authorities. If a developing country does not have the human resources within administrative agencies or within the judiciary who are able to implement environmental law, it will not be very effective. A consequence in this particular situation is that the use of vague standards, such as standards in environmental permits, is not likely to be effective. The better alternative would be for the central legislator to define the obligations with which operators have to comply in a specific manner. As a result the legislator directly determines the specific rules and there is less need to rely upon a further implementation by either administrative authorities or the judiciary. That structure equally has the advantage that it provides less discretionary power to administrative agencies, thereby also lowering the risk of corruption [12].

A second consequence of the literature is that one would have to reconsider the advice that traditional environmental law and economics scholarly literature has often formulated, which is to use so-called incentive-based environmental instruments. Examples of those may be environmental taxes and emission trading. Although they undoubtedly have strong benefits as well, a major disadvantage is that instruments like taxation and emission trading are based on an exchange of funds between the regulatees and administrative agencies. In an environment where corruption is widespread, that may not be a smart idea. Moreover, environmental taxes and emission trading equally require a detailed system of implementation, for which the human capital may again be lacking. Developing countries can therefore rely more on specific and clear rules in central legislation, which provide less discretion to civil servants within administrative agencies [113].

A third lesson from the law and economics literature relates to (de)centralization. Traditionally many have advocated environmental decision-making at the local level where decision-makers may have the best information on the environmental problem to be regulated. In principle, local decision-makers may have optimal information on the specific environmental problem to be regulated. There is, however, particularly in developing countries, a serious risk that the local politicians might be lobbied or bribed by the local elite. Given the importance for the local economy and employment of many industrial activities (such as for example mining), it may be very difficult for local decision-makers to determine environmental obligations in the public interest. When that danger exists, it may be preferable to shift decision-making to the central level, where there can be a greater likelihood of standard setting in the public interest.

A consequence of the survey of this literature is that the ideal, smart mix of environmental policy instruments designed for developed countries cannot automatically be transplanted to developing countries. That optimal mix is often based on particular assumptions about the availability of human capital and civil servants acting in the public interest, assumptions that are often not met in developing countries. If that is the case, the optimal mix of environmental instruments for developing countries may look different. That can be an important consideration for policy advice from China with respect to the implementation of ecological civilization in host countries along the BRI.

8. Concluding Remarks

In this contribution, I have focused on two recent and important policy developments in China, on the one hand the concept of ecological civilization, and on the other hand the belt and road initiative; the focus of this contribution was particularly on the combination of the two. “Ecological civilization” presents a different narrative than the stories heard so far about either sustainable development or the green economy. Goron [6] argues that since its introduction in 2000, ecological civilization is now increasingly used both in academic papers and in newspapers and is moreover used much more often in academic articles in China than the concept of sustainable development. Replacing “development” by “civilization” has emphasized a shift from the economic to the political, the cultural and the moral dimensions. Goron [6], however, argues that the transformative reach of ecological civilization as a theory of sustainability is politically restricted as it supports the CPC’s claim to power based on its promise to bring about progress for Chinese society, as well as the world. It is a different concept and it clearly indicates the ambition to be broader than traditional notions of environmental law as the reference to “civilization” refers also to incorporating cultural aspects. Ecological civilization is associated with the notion of “harmony between man and nature” [6]. That may be a typical Asian approach to environmental issues as, for example, also in Bali the concept of “tri hita karana” (the unity of mankind in its relationship with the divine, nature and others) is employed to suggest a balance between spirituality, social welfare and nature [114].

By relating the concept of ecological civilization to the BRI, China has an opportunity to show its environmental leadership in the world by showing concern for environmental quality, more particularly in developing host countries along the BRI. This was recently also advocated by Rahman et al., arguing that the Bangladesh–China–India–Myanmar economic corridor under the BRI should not only focus on connectivity and massive infrastructure development for securing economic growth among themselves, but also undertake a long-range policy to cope with environmental degradation and to ensure sustainable green infrastructure [69]. As such, that approach also fits into the quest for a global environmental law searching for principles underlying all legal systems, such as has been undertaken *inter alia* by Yang and Percival [115,116].

In this contribution, I drew a parallel between China’s current environmental ambitions along the BRI and attempts from developed countries in the North to improve environmental quality in developing countries in the South. That literature (from both law and economics, law and development, but also other disciplines) points to a few rather obvious lessons that have to be taken into account when promoting environmental quality through legal rules and more particularly legal transplants from donor countries. One of those is to respect cultural diversity and more particularly the different legal culture in the host country and the fact that transplants should not be imposed in a top–down manner, but should be driven by local demand to increase receptivity. Ascensão et al. advocate that to promptly raise awareness about the possible environmental and social risks of the BRI, there needs to be dialogue among those involved in the decision-making process, including NGOs and local communities [7].

Even though there are currently still many uncertainties surrounding both the concept of EC and BRI, the literature clearly indicates that by promoting the improvement of environmental legislation in the host countries along the BRI, there should be transparent stakeholder consultations and the literature equally refers to inclusive legal transplants and respect for cultural diversity. Boer refers to the need to support BRI countries to develop procedures for environmental impact assessments and inclusive and transparent stakeholder consultations [8]. This shows that there is already awareness among the Chinese leadership of the importance of local demand and ownership of the institutional reforms in the host countries along the BRI. I argued that it may be useful to learn from past experiences (both positive in the form of best practices and negative in the form of regulatory failures), as these lessons (incorporated in the literature discussed in this contribution) could be helpful on the challenging road to implementing ecological civilization equally in host countries along the BRI.

Funding: This research received no external funding.

Acknowledgments: The author is grateful to Martin de Jong, editor of the Special Issue, and to anonymous referees for their valuable comments and suggestions, and to the Erasmus Initiative for the Dynamics of Inclusive Prosperity for supporting the publication.

Conflicts of Interest: The author declares no conflict of interest.

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