
CARBON CREDIT CERTIFICATION OF INVASIVE SPECIES SILVICULTURE PROJECTS AND THE POLLUTER-CREDITOR PARADOX

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ABSTRACT

This paper aims at whether or not it is possible to certificate forestry project activities, that employ exotic species, and aims at developing parameters for an environmentally friend interpretation that must be adopted for possible conflicts between national and international regulations, as well as critically thinking, through the analysis aforementioned, the paradox of today's regulatory model, since it's possible, in some situations, to be considered a source of pollution and, at the same time, generate carbon credits, what can be considered a nonsense, and needs to be treated by the juridical experience. In order to overcome a purely abstract analysis, this paper employs an methodological approach centered in the perception of law as an experience. This paper also employs the development of qualitative theoretical-dogmatic analysis. Adopting theoretical marks such as the sustainable constitutionalism, or the constitutionally correct sustainable development; the critical-inclusive development and the critic to development pathologies and mimetic development theory; this paper sought to confront the different perspectives on the international normative standards and the national environmental regulation, as well as the interspatial constitutional control and the constitutional conventionality control evocable due to the thematic, notably focusing on the (dis)respect to constitution's environmental principles evaluation of the regulatory standards employed.

Keywords: Environmental Policy; Clean development mechanism; Forestry project activities; Sustainable development.

CERTIFICAÇÃO DE CRÉDITO DE CARBONO NA SILVICULTURA DE ESPÉCIES EXÓTICAS E O PARADOXO DO POLUIDOR-CREDOR

RESUMO

O presente trabalho se propõe a analisar a possibilidade de certificação das atividades de projeto florestais que empregam espécies exóticas e construir parâmetros para uma interpretação ecologicamente adequada para os possíveis conflitos que surjam entre as normativas nacionais e internacionais a esse respeito, bem como objetiva refletir criticamente, a partir dessa análise, sobre os aspectos paradoxais do modelo regulador atual, notadamente quanto à possibilidade de, em algumas situações, a silvicultura com espécies exóticas, ao mesmo tempo que possa ser considerada atividade poluidora ou potencialmente poluidora, possa ser igualmente credenciada como geradora de crédito de carbono, gerando um contrassenso na experiência jurídica brasileira. Adotou-se uma abordagem metodológica do direito como experiência, que, portando, busca superar a análise puramente abstrata do fenômeno jurídico. Recorreu-se à realização de análises qualitativas de vertente teórico-dogmática. A partir de referenciais teóricos como os conceitos de constitucionalismo sustentável, ou de desenvolvimento sustentável constitucionalmente adequado; a perspectiva do desenvolvimento crítico-inclusivo e a crítica às patologias do desenvolvimento e do desenvolvimento mimético, buscou-se confrontar as diferentes perspectivas de interação dos padrões normativos internacionais com a regulação ambiental nacional, bem como os controles de constitucionalidade interespacial e de convencionalidade suscetíveis quanto ao tema, notadamente com foco na avaliação do (des)respeito aos princípios constitucionais ambientais, nos modelos regulatórios empregados.

Palavras-chave: *Política nacional de meio ambiente; Mecanismos de desenvolvimento limpo. Atividades de projeto florestal. Desenvolvimento sustentável.*

INTRODUCTION

International concern with climate change has inspired the production of several international documents and agreements, which are responsible for supporting this area of Environmental Law.

Among these agreements, it is imperative to highlight the United Nations Framework Convention on Climate Change, known principally for the production of the Kyoto Protocol, an agreement that established targets for the reduction of carbon dioxide emissions, with a cogent nature for the developed countries that are signatories to the convention.

Subsequently, the aforementioned protocol was regulated by the Marrakesh Agreement, which provided for the instruments for the reductions stipulated in the goals of the protocol. Among the possible ways of reducing emissions, there is the possibility of registering afforestation and reforestation projects, used to remove carbon from the atmosphere.

On the other hand, foresters, rural producers and companies engaged in the expanding market of timber production and inputs derived from monoculture forestry projects (mainly pine and eucalyptus) saw the possibility of carbon certification for their ventures an opportunity, both for the increase of economic results, and for the environmental validation of its activities.

Against this background, this paper seeks to answer the following questions that guide it: Is it possible to create carbon sinks for the perception of credits in the regulated market, using forests planted with exotic species? Can a pine or eucalyptus monoculture be considered a forest for the purposes of this regulation? And even if it is considered a carbon sink, can it be considered a legitimate sink to receive credit certification for this, given the other environmental problems and risks that this type of monoculture generates? How should the relevant regulations be interpreted in order to avoid the possible backlash represented by the possibility of configuration and a paradox in relation to environmental principles: the likely occurrence of a polluter-creditor?

This paper proposes to analyze the possibility of certification of forestry project activities that use exotic species and to construct parameters for an ecologically adequate interpretation of the issue. Particular attention was paid to possible conflicts between national and

international regulations in this regard, as well as to the interaction of these regulations with concrete forest projects in Brazil that used exotic species and yet received carbon credit certification.

The objective of this study is to reflect critically on the paradoxical aspects of the current regulatory model, notably the possibility that, in some situations, silviculture with exotic species, while being considered a polluting or potentially polluting activity, may also be accredited as a generator of carbon credit (thus a disruptive activity), which generates a counter-claim that needs to be properly dealt with in Brazilian legal experience.

It was adopted a methodological approach referenced in the perception of *law as an experience* focused on the negotiation of regulatory models in their actual state of effectiveness (REALE, 1999, 77-86), which, in order to overcome the purely abstract analysis of the legal phenomenon. It was also used to carry out qualitative analyzes of theoretical and dogmatic aspects. From theoretical references such as the concepts of sustainable constitutionalism, or constitutionally adequate sustainable development and democratic and environmental rule of law (CANOTILHO, 2015, p. 23-32); and the perspectives of critical-inclusive development and critique of the pathologies of mimetic development and development (PINTO COELHO, 2014, p. 41-60), the aim was to confront the different perspectives of interaction between international normative standards and environmental regulation (MAZZUOLI, 2015) on the subject, notably focusing on the evaluation of (dis) compliance with the constitutional principles of the environment, in the regulatory models employees, evaluated as we indicated, from the concrete cases of certification of carbon credit for silvicultural practices with exotic species.

This methodological test, as we will see, enabled us to achieve, as the main results, an elaborate analysis of the Brazilian model of regulation and application of the Clean Development Mechanisms, as well as mapping the internal norms, hypotheses and methodologies used so that it is possible to certify the activities of a forest project in Brazil, as well as a critical analysis of the contradictions and difficulties of validating the certification situation for silvicultural practices with exotic species.

2 CARBON CREDITS AND THE CLEAN DEVELOPMENT MECHANISM IN BRAZIL

2. 1 The configuration of the legal model of the CDM

The environmental concern with climate change has expanded in recent decades, mainly because of problems such as the destruction of the ozone layer and global warming.

In order to take measures to combat such harmful conditions, international events were held and legal instruments of equal scope were signed with the intention of regulating such issues. These include the United Nations Framework Convention on Climate Change (UNFCCC), which aims to indicate the anthropogenic causes of climate change and to influence them through direct measures such as the reduction of gas emissions of the greenhouse effect, or indirect, such as the conservation of sinks and reservoirs of these gases (MACHADO, 2007 apud CASARA, 2007).

It should be noted that the convention under study classified the parties according to their economic development, a criterion related to the emission of greenhouse gases, according to the resolution of the agreement itself, separating them into Annex I and non-Annex I parties. It contains the parts that are developed countries while developing countries make up the non-Annex I Parties.

It is important to note that the convention studied is regulated by a body called the Conference of the Parties (COP), established and regulated in article 7 of the Climate Convention, understood as the supreme body of the convention, also responsible for making decisions that regulate the goals and institutes of the said convention, in addition to seeking its continuous implementation.

Among the several Conferences of the Parties, COP 3 is highlighted, the main product of which was the Kyoto Protocol, which established quantitative commitments to reduce anthropogenic emissions, through the adoption of mechanisms, among which the development mechanism (CDM), the only one of the three flexibility mechanisms envisaged which may involve non-Annex I parties, ie developing countries that have ratified the Protocol.

The CDM basically consists of the development of activities in the territories of non-Annex I Parties in order to remove greenhouse gases or reduce their emissions so that they become aware of and master techniques and procedures that promote development while assisting Annex I countries to meet their emission limitation goals (CALISING, 2005 *apud* CASARA, 2007).

After compliance with certain requirements and due process with the bodies established by COP 7, the reductions in greenhouse gas emissions will be certified, generating the so-called certified emission reductions - CERs. The latter, in turn, may be traded on the global market and acquired by Annex I countries, so that they can complete the target.

In order for a particular project to be part of the CDM, it must meet certain eligibility requirements contained in the Marrakesh Agreement, Article 12, paragraph 5, points “a”, “b” and “c” of the Kyoto Protocol, understood as a voluntary participation, the real and measurable long-term benefits to the host party, and the additionality of the activity.

Being the first to be easily understood, it is necessary to discuss the additionality requirement, understood as the requirement that emission reductions arise directly from the implementation of the project activity, proving that such a reduction would not occur without the project activity. To do so, two scenarios are compared, *Business as Usual*, indicating the historical performance of the market activities of the specified region (HANUM, 2007, p. 26), which establishes a reference of registered greenhouse gas emissions in the period, called the *baseline*, and the scenario to be analyzed in sequence after the project is installed.

The main document for a project activity is the project design document, whose preparation is the responsibility of the participants in the project activity, which should contain a detailed description of the project activity, containing title, participants, type and characteristics of the activity, the technologies employed as well as the way in which they will be transferred, the location, the estimates and projections of emission reductions (CASARA, 2007, p. 107; HANUM, 2007, p. 39).

The document should also point to the methodology used for the baseline, monitoring and emission reduction estimation, which should be one of those previously approved by the CDM Executive Board, or a new methodology to be approved by the CDM (CASARA, 2007, p 108,

HANUM, 2007, p. 44).

Another topic of mandatory constancy in the project design document is the environmental impact study, which should cover even possible transboundary environmental impacts, and if necessary, the host party may request a report on environmental impacts (CASARA, 2007, p. 109; HANUM, 2007, p. 48).

Appendix B of COP 7 Decision 17 also states in its “e” that the study of environmental impacts should be carried out in accordance with the procedures required by the host Party. This implies that when Brazil is part of a project activity, the project design document should include the study of environmental impacts and the report of environmental impacts in accordance with Resolution No. 01/1986 of the National Environmental Council, and other existing standards.

Regarding afforestation and reforestation project activities in Brazil, the model document to be followed is that of Annex I to Resolution No. 02 of August 10, 2005, of the Interministerial Commission on Climate Change (HANUM, 2007, p. 40). However, it should be pointed out that the aforementioned model document in its section “F” is restricted to rewriting item “e” of said decision of the conference of the parties.

2.2 The specificities of forestry project activities such as CDM

It is necessary to elucidate some issues related to the specificities that the afforestation and reforestation project activities have, applying everything that was previously explained about the clean development mechanism.

It was initially pointed out that the decision of COP 11 7 conceptualized in Annex 1, item 1, letters “b” and “c”, forestation (*afforestation*) and forestry (*reforestation*), respectively, as:

man-induced conversion of land not forested for a period of at least 50 years by planting, sowing and/or other man-induced promotion of natural sources of seed (free translation).

the conversion, directly induced by man, of non-forested land on forested land by planting, sowing or other man-induced promotion

of natural sources of seed on land which has already been forested but which has been converted to non-forested land free).

It is necessary to emphasize that there is also the concept of forest, of an eminently technical nature, which states that forests are natural or exotic vegetation cover areas with one or more species, where about 10 (ten) to 30% (thirty percent) of the trees have a minimum height potential of two to five meters at maturity.

Based on these concepts and what was presented on the clean development mechanism, forest project activities may only be eligible for the mechanism if they meet the additionality, sustainable development, and human induction criteria. The areas that naturally return to the forest composition cannot be considered for the project since they are not afforestation or reforestation activities; in addition, the mechanism does not provide for the conservation of existing forests as valid project activities (RORIZ, 2010, p. 110).

As stated above, it is necessary for the project to contribute to sustainable development so that it is eligible as a project activity. For this reason, it is necessary that, in addition to the environmental contribution, the project is capable of developing socially and economically the region of the place where it is being implemented.

In order to define the additionality of the project to be considered eligible, as stated above, it is necessary to take into account the applicable methodologies as well as some tools that prove the effective sequestration of atmospheric carbon. Regarding the methodologies that can be used today, the Executive Board of the Clean Development Mechanism adopts two methodologies for large-scale forestry project activities (AR-AM0014 and AR-ACM0003) and two methodologies for small-scale forestry activities (AR-AMS0003 and AR-AMS0007) (UN, 2015, p. 261-266)¹.

AM0014 methodology deals with forest project activity in areas of mangroves or wetlands², determining the need to use more than 90% (ninety percent) of native species from the previously degraded region.

¹ It explains that the AM and ACM acronyms mean, respectively, that the methodology was approved (*approved methodology*) for that project in which the proposal was, and that the methodology is approved and consolidated methodology (*approved consolidated methodology*) because methodologies approved for similar projects. Moreover, the abbreviation refers to the AR forestry (*afforestation*) and forestry (*reforestation*), respectively, and the symbol AMS refers to approved methodologies for small scale

² Mangroove habitat (*wetlands*).

The approved and consolidated methodology ACM0003, on the other hand, aims to attend to other forestry project activities, except for the areas of mangroves and wetlands, besides the need for the area in question not to be forested.

The other methodologies listed for small-scale activities reproduce the methodology of a specific methodology for wetlands and mangroves, and a methodology for the other areas, presenting specific requirements that qualify them as small-scale.

In addition, several techniques are used to demonstrate that the project complies with the additionality and removes greenhouse gases, among them the mapping, through geoprocessing and remote sensing; the vegetation inventory, determined by sampling techniques and field measurements, also uses laboratory techniques that determine the carbon content and biomass measurement of the project's plants (RORIZ, 2010, p 115).

The techniques based on geotechnology are used to set the boundary of the project characterizing, specifying the use of the soil and plant species, in order to plan the sample to be studied, locating it geographically through the use of satellite images and aerial photographs (RORIZ, 2010, p. 116)

When inventorying the vegetation, it is necessary that technical staff use measuring instruments, with the objective of obtaining data from the sample units (RORIZ, 2010, p 116).

Biomass assessment, in turn, may use indirect methods, which use the volume of the trees or the weight of some samples, or direct methods, which promote the measurement of a chosen sample tree, or use a series of tree in question for the calculation of its biomass (RORIZ, 2010, p 117) . However, the laboratory methods are based on acids or lasers that, when they come in contact with dried samples of the collected vegetation units, are able to generate data on the levels of carbon sequestered (RORIZ, 2010, p. 119).

Once these specificities for afforestation and reforestation projects have been met, project activities will ordinarily follow the design, validation, approval, registration, monitoring, and issuance of certified reductions.

2.3 Specifying the terms of conflict in forestation with exotic species: sustainable development as inclusive multidimensional development and insistence on not taking it seriously in concrete situations

The regulations on the regulated carbon market are based on sustainable development, establishing it as a goal to reduce emissions and remove greenhouse gases from the atmosphere, furthermore defining conditions for considering areas as eligible, as well as establishing the carrying out of studies of environmental impacts according to the national legislation, as already indicated. But we must take seriously the concept of sustainable development, for the concrete treatment of cases of CDM proposal.

The concept of sustainable development, which emerged economically and politically with the Brundtland Report, has legal consequences in the planning, being considered as a principle of Environmental Law, according to the doctrinal interpretation of article 4, the item I, of the National Environmental Policy. However, because of the focus on environmentally sustainable development or economically sustainable development, its concept in Brazilian legal common sense is sometimes endowed with high “unidimensionality”. It is not often understood that these dimensions are interdependent.

The idea of sustainability is endowed with sufficient complexity to be understood in a “multidimensional” way, and only then can this concept be sufficiently coherent with the constitutional project put in place in 1988, encompassing environmental, cultural, social and democratic development (PINTO COELHO, 2012, p. 23). Similarly, Canotilho states that “a multifaceted approach and a holistic understanding are needed to capture the underlying reality and the subtle balance aimed at sustainability” (2015, p. 79).

Canotilho has a procedural dimension of sustainable development since it must be implemented to guarantee the well being of both the present and future generations. Such processability effectively depends on the principle of participation, since decisions that value sustainability will be valid according to the participation of the current citizens, guaranteeing, of course, the interests of future generations as well (CANOTILHO, 2015, p. 81). Thus, complementing this analysis, from the observations of Pinto

Coelho (2012, p. 25-26), we can consider that sustainability is built with the search for the complex balance of interests of the different sectors of society in its present, with the difference which the constitution establishes in order to pursue this theme, adding to the different care that needs to be taken in the present, in view of the projections of future choices.

As a consequence, another dimension of sustainable development for Canotilho (2015, p. 81ss.) is the material dimension, which, according to him, has three aspects, the environmental side, the social side and the economic side. The environmental aspect must be understood as the characteristic of sustainable development, which refers to the correct way to manage natural resources, respecting the renewal of renewable resources, and preserving non-renewable resources (CANOTILHO, 2015, p. 81). As for the social aspect, it is defined as referring to the democratic and participatory distribution of social burdens and bonuses, including those referring to the difficult choices between economic production and preservation of the environmental balance , determining the participation of the public, in order to protect the defenseless from any injustice arising from environmental impacts and degradation of natural resources. Finally, the economic aspect of the principle of sustainable development determines that economic activities must be constructed in a stable and balanced way, avoiding the intense oscillations between growth and crisis, both in macro and microeconomics, including the need to to guide economic activities through the use of renewable resources, the adoption of less polluting technological and logistical options as well as the equitable redistribution of environmental and social costs resulting from promoted activities, resulting in important principles, among them those related to the *internalisation of negative externalities* , from which derives the principles of Brazilian environmental law from “polluter pays” and “user pays”.

The number of aspects that are linked to the aforementioned concept varies according to the authors, the last author in particular considered existing three aspects, environmental, social and economic. There are considerations that present seven aspects that are essential to sustainable development, such as social, economic, ecological, cultural, spatial, environmental and political aspects (PINTO COELHO, 2011, p. 265). As for the aforementioned aspects, the following observation by Pinto Coelho (2011, p. 265) stands out: “if sustainable development is a development

model, sustainability can be defined as a concept related to the continuity of economic, political, social, cultural and environmental aspects of human society “. Thus, sustainability must always be supported by the tripod of democratic or political, social and environmental development, with a view to reducing inequalities, fostering dialogue, guaranteeing minimum levels of quality of life, and rationalizing the relationship between man and the natural resources (PINTO COELHO, 2012, p. 23).

Finally, there is still the dimension called by Canotilho synchronic dimension. This dimension of the principle in focus establishes a regional policy in which sustainable development must be supported in several localities, which translates the idea of spatial justice (2015, p. 81).

The mentioned dimension must be understood etymologically, as the dimension “in which there is synchrony” (FERREIRA, 1986), which, consequently, must be understood as “the purpose or effect of maintaining an operation in conjunction or in conjunction with another” (FERREIRA, 1986). In this way, the synchronic dimension of sustainable development dictates the propagation of this development model, spatially encompassing the largest possible area.

This time, we can see the possible contradiction, in the possibility of, at the same time, there being certified emission reductions in projects that use exotic forestry, considering the polluting potential of this activity in some cases. It is unacceptable that CDM regulations allow pollution and environmental degradation in developing countries to generate carbon credits and the consequent reduction of air pollution. Since such permission is contrary to sustainable development in its synchronic dimensions, since there would be no implementation of the sustainable model in the host country; diachronic, considering that the environmental degradation in question would be responsible for harming future generations; taking into account that sustainable development would not be established in order to ensure intergenerational justice; and, in the same way, there would be strict noncompliance with the material dimension in its environmental and social aspects.

In addition to the foregoing regarding sustainable development, which is the guiding principle of both regulations, it is important to note that the Marrakesh Agreement, in the document of the Conference of Parties number seven, COP 7, determined in item 27, item “c”, that

the Operational Entity Designated Party is required to comply with the laws of the Host Party when promoting the validation or verification and certification of proposed project activities.

Thus, in one of the first phases of the CDM activity project cycle, it is required that the activity, in addition to presenting all the requisite eligibility requirements, namely, additionality, voluntariness, and benefits to the host Party, must also be in accordance with the legislation of where it is being implemented.

Therefore, due to the outstanding axiological foundations and the imposition of respect for the national legislation of the host Party, the paradox of the polluter-creditor would not be reached from a theoretical point of view, since there would be no possibility, according to the norms international climate change and regulated carbon market, and national regulations dealing with biological pollution, to set up the permissive counterpoint to the polluter-creditor paradox. However, in a concrete analysis of the project activities that were certified in Brazil, we will see that it was possible to verify the contrary, revealing that the constituted legal model and the actual experience are not adequate interpretation in the normative and principle in play.

As already presented by this work, the right to the balanced environment and the healthy quality of life is a fundamental right, established constitutionally according to the diction of article 225 of CF/1988. However, a distinction is made between fundamental rights, those rights that have been recognized and affirmed in the constitutional sphere of a state, in order to generate a system of internal protection, and human rights, which are consolidated in treaties of international law, seeking to establish a protection to the human being, without the necessary linkage to a State, endowing itself with a supranational character in the scope of the International Human Rights Law³. Thus, we can consider that the right to a healthy and balanced environment is a human-fundamental right that makes up both the fundamental constitutional block of CRFB/88 and the list of economic, social and cultural rights (ESCR) recognized by the order International.

It is worth remembering the understanding already consolidated

³ SARLET, 2007 *apud* MACHADO, Diego Pereira, Direitos humanos. 3 ed. Salvador, Bahia: Editora Juspodivm. 2015.

in the state of the art of this debate, in the sense that the right to the environment was constituted as a human-fundamental right of third generation, since these are anchored in fraternity and solidarity, and commonly have a diffuse dimension, although it can and should produce, in concrete situations, imputations of individual rights and duties⁴.

This time, in the event of a possible conflict between international regulations on climate change, and internal regulations that prevent biological pollution (conflict only possible to be verified in the specific case, when the specific characteristics of a afforestation or reforestation project so that it is configured, especially in situations of use of exotic species or in situations of tending monocultures), the most favorable normative configuration should be applied (with more weight to the internal norm, or to the international norm, depending on which, produces a greater level of protection in the case), but always without completely excluding the other, since both in this situation fulfill different, but equally important, complementary functions to promote sustainability.

As a reference, Canotilho's understanding of the principle of a high level of ecological protection, which governs the relations between the members of the European Union, with the intention of bringing legislation within that community closer together, in order to establish the Community protection, generating a common denominator that should be respected by the countries of the community⁵. As the author points out, the principle of a high level of ecological protection leads to a breach of the rule of domestic or Community law which leads to less protection of the environment. In this way, if the Portuguese norm establishes greater protection to the environment than the community norm, it must be carried out in order to establish a higher level of protection. In the same way, if the internal norm has a lower protectionist level, it should give way, favoring the community or international norm.

Brazilian law also established the principle of the prevalence of the most protective environmental standard, as a consequence and improvement (in the field of environmental law) of the principle of subsidiarity in our complex federalism.

Thus, we can conclude that the constitutional commandment of

4 MACHADO, 2005 *apud* MIALHE, Jorge Luís, *Direito Ambiental como expressão dos Direitos Humanos: a relevância do direito à informação no Mercosul*. Verba Juris, ano 5, n. 5, jan/dez. 2006. p. 212.

5 CANOTILHO, op. cit. p. 47.

rational realization of human interaction with the environment, in order to guarantee its balanced future, capable of allowing an inclusive and multidirectional development, demands, at the same time, to consider the purely environmental analysis of the questions brought, with analyzes also of economic and social order. However, it does not mean that, to leave the eight (a strict environmentalism), to enter eighty (a strict economic developmentalism). Social development here is the scale. Thus, a careful avoidance of environmental or developmentalist reductionisms is necessary to think about the normativity in force in its relation to a conception of development that is complex, inclusive and non-reductionist, as well as (and above all) critical (cf. . PINTO COELHO, 2014, p. 46-48).

3. CASE STUDY OF PROJECT ACTIVITIES BRAZILIAN FORESTS OF EXOTIC SPECIES WHO RECEIVED DEFERRED CERTIFICATION

3. 1 The three reforestation *cases* certified in Brazil

This topic is dedicated to analyze the activities of forest projects approved in Brazil, available on the website of the Ministry of Science and Technology⁶, specifically the “Reforestation Project as a Renewable Source of Wood Supply for Industrial Use in Brazil” in 2008, the “AES Tietê” MDL Project for Reforestation in the State of São Paulo, and the “Vale Florestar Project - Reforestation of degraded tropical areas in the Brazilian Amazon” of 2012.

Initially, it should be noted that the 2008 and 2012 projects have the objective of reforestation.

In the case of the “Vale Florestar” project, the proposed reforestation is of little more than 7,000 (seven thousand) hectares with a plant of the genus *eucayptus*, in the degraded part of the Brazilian Amazon.

The project “Reforestation as a Renewable Source of Wood Supply for Industrial Use in Brazil” was limited, at first, to state in the description of the project that the planting of renewable biomass would be made, however, in its item “A. 5. 3” listed as selected species for the activity three species of eucalyptus, aiming at the highest productivity of the project.

⁶ Disponível em: <<http://www.mct.gov.br/index.php/content/view/57967/57967.html>>. Acessado em: 28 de junho de 2016.

Of the three carbon credit certifications granted in Brazil, the “forest and reforestation” category (there are other categories), only the 2010 “AES Tietê” project employed native species. In the description of the activity the term reforestation was used, and in pages 4 and 5 it was stated that the farmer has already carried out tests in an area of little more than 1,500 hectares planting native species that do not demonstrate spontaneous regeneration, between 80 (eighty) and 126 (one hundred and twenty-six) different native species.

Regarding the assessment of land eligibility for the CDM project activity, the projects followed Annex 18 of the 35th Meeting of the Executive Council in Bonn which provides for procedures to demonstrate that the area is eligible for afforestation projects and reforestation.

Following the provisions of the annex, it is necessary to prove that the vegetation is below the levels defined for the area to be considered as forest, in addition to demonstrating that there is no expectation for the local vegetation to reach the minimum standards to be considered in this way. In addition, it is necessary for afforestation projects to prove that for at least 50 years the area in question is not forest, and for reforestation projects it is necessary to prove that the area has not been forest since December 31, 1989.

The annex in question lists three means capable of meeting the stipulated requirements, the first is the use of satellite images and aerial photos together with soil data, as well as information on land use and coverage from maps or data set space-based surveys, and, finally, local ground-based surveys from local registries.

During the project description, the design documents analyzed separately the eligibility of the land for the proposed activities. The project “Vale Florestar - Reforestation of degraded tropical areas in the Brazilian Amazon” presented an assessment of the eligibility of the land, stating that the area was not forested as of the stipulated date of 1989, they also used satellite images, global positioning, as well as aerial photographs, to draw up maps that demonstrate eligible areas, thus defining project boundaries.

The “AES Tietê” project, likewise, used satellite images, comparing images of 1989-1990 with images from 2006-2007, in order to demonstrate that since the date initially referred to, the area was not forest.

The project “Reforestation as a Renewable Source of Wood Supply

for Industrial Use in Brazil” was also used to describe the vegetation existing in 1989 and 2000. It is interesting to note that the design document for this project criticizes the methodology set out in annex 18 of Executive Board meeting 35, stating that, before the stipulated deadline, land was used for planting forests with non-spontaneous vegetation, which prevents them from integrating project boundaries, while ineligible, and that this was foreseen before the consolidation of the clean development mechanism.

Regarding the technology employed, the projects differ little, mainly highlighting the development of research and methods of optimization of the processes of planting, harvest and management⁷, and, except for the “AES Tietê” project, the others also list the optimization of quality management, as technology to be used.

Regarding the transfer of technology, the project “AES Tietê” states that the transfer process will take place with literature and scientific techniques through ESALQ/USP. Regarding the technology transfer proposed by the project document “Reforestation as a Renewable Source of Wood Supply for Industrial Use in Brazil”, it states that it was not necessary to transfer technology from other countries, but that the project could result in The project “Vale Florestar - Reforestation of degraded tropical areas in the Brazilian Amazon” said the same.

Regarding the methodologies adopted by each project, the project “AES Tietê” adopted the AR-AM0010 methodology, the project “Vale Florestar - Reforestation of degraded tropical areas in the Brazilian Amazon” adopted the AR-ACM0001 methodology, Finally, the project “Reforestation as a Renewable Source of Wood Supply for Industrial Use in Brazil” adopted the methodology AR-AM0005.

The AR-AM0005 and AR-AM0010 methodologies were approved specifically for the Brazilian projects under study, is due to afforestation or reforestation, in pasture areas, as a source of wood supply for industry and/or commercial uses; and afforestation or reforestation implemented in areas of underutilized pastures in reserves or protected areas, respectively.

The consolidated methodology AR-ACM0001 is based on approved methodologies AM-0003, AM-0006 and AM0032 and is applicable for cases where afforestation or reforestation is promoted in degraded areas or

⁷ Contido nos Documentos de Concepção de Projetos, páginas 15 a 17 do “Reflorestamento como Fonte Renovável de Suprimento de Madeira para Uso Industrial no Brasil”, páginas 12 a 14 do “Projeto MDL de Reflorestamento no Estado de São Paulo da AES Tietê”, e, páginas 15 a 20 do “Projeto Vale Florestar - Reflorestamento de áreas tropicais degradadas na Amazônia Brasileira”.

that would continue to degrade in the absence of the project.

In exploring the methodological issues, the technology employed and their transfer to the host country, and the descriptions of proposed and approved activities, it is now appropriate to investigate the environmental impact studies presented in project design documents.

The project “Vale Florestar - Reforestation of degraded tropical areas in the Brazilian Amazon” starts the topic present in its project design document, stating that the State Environmental Council of the State of Pará does not require a study of environmental impacts for the activities of planted forests because of negative deforestation initiatives in the area in question. Nevertheless, the document lists nine possible impacts, among which are listed as negative only those referring to the introduction of exotic species and the implantation of monoculture.

Environmental impacts are enumerated by enumerating the benefits that the species to be introduced, *Eucalyptus Urograndis*, will bring to the soil, economic development, landscape, water resources, and the local environment, since the area to be used is degraded and constitutes pasture area. Finally, the design document states that no negative impact has been verified, and that the activity will keep monitoring for environmental impacts.

As for the project “Reforestation as a Renewable Source of Wood Supply for Industrial Use in Brazil,” the project design document argues that many of the arguments against eucalyptus plantations are based on “(...) myths and prejudice⁸”, stressing that there are arguments that are supported by data.

The paper goes on to collate data and research that goes against the claims commonly made about planted forests. Such research shows, for example, that the trees of the genus used do not require more water than other activities employed. The document, as well as the project document “Vale Florestar”, also presents several arguments about how the plantation contributes to the surface runoff, to the quality of the soil, since it generates litter in the planted area, for the correction of the acidity of the soil, among several other factors.

On the other hand, the study considers that only one impact should be understood as of high importance, however, in compliance with the

⁸ Documento de concepção de projeto, p. 123. Disponível em: <http://www.mct.gov.br/upd_blob/0200/200628.pdf>. Acessado em: 11 de maio de 2016.

precautionary principle, decided to consider another possible impact as of high relevance. In this way, two impacts were considered, namely, the increase in the concentration of suspended solids, nutrients and organic matter in the water courses; and changes in the pluvial regime and water quality of the basin.

The document states that the first negative impact was not found in the study, however, claims that it may be caused by reforestation activity, which is why it will be monitored by the project. As for the second impact, it is alleged that there is no technical element that can immediately assess such situation, and that is controversial in doctrine, however, the project intends to monitor it.

It is further argued that silviculture practices that effectively result in a lower erosion rate should be adopted, and that soil and water conservation practices should also be adopted in order to minimize the possibility of damage being caused by the project.

Finally, the design document “AES Tietê” was limited to describing the advantages of the activity regarding biodiversity and carbon sequestration, indicating that the activity has no possible negative impact. Considering that the mentioned activity will carry out the reforestation with native species, it does not perceive the existence of a reasonable criticism against the disposition in the study of environmental impact as presented.

Through the study of the three cases analyzed above, it can be seen that the “MDL for Reforestation MDL in the State of São Paulo of AES Tietê” is distinguished from the others analyzed, due to the use of native species for planting, recovery of degraded areas and the preservation of riparian areas, which is why it can be classified as a conservationist project.

On the other hand, the other projects have a more commercial character, considering a simplified classification, using monocultures of eucalyptus (concealed by the use of three different species) and exploring their productivity. However, such activities did not lose, for the national authority designated for certification in Brazil, the required additionality typical of CDM projects, in addition, according to this authority, on eligible lands, in accordance with Annex 18 of the meeting No. 35 of the Executive Council, and assist, in the view of this body, environmentally in the recovery of degraded areas. In addition, for the designated authority these two projects “do not present risks of environmental impacts that can

not be monitored and for which preventive and mitigating measures are in order”.

3. 2 The difficulties of certification of carbon sinks made up of exotic species

Reflecting critically on the position of the authorized certifier, it must be considered that there is a clear contradiction here, since it is clear that the authority, even implicitly, recognizes that eucalyptus monocultures are potentially polluting (if they were not, because they would receive environmental monitoring and the attribution of mitigating measures?), but still received an environmental *credit* certification . Therein lies the paradox that motivates this investigation.

The approval of these projects can be questioned from different perspectives. One is about the framework itself as “forest”, or “forestry”. All concepts based on the existing legal framework indicate a monoculture (although composed of three species of the same family of arboreal vegetation) never configures itself as forest. Another questioning is in the direction of criticizing the benefits of such monocultures pointed out in Environmental Impact Studies, since obviously the fact that bringing some benefit (clearly overvalued in the analyzed EIS) does not elude the polluting nature of an activity. A mining brings benefits, but remains a polluting activity, so it could never receive carbon credit certification. Therefore, also eucalyptus monocultures could not receive this certification. A third way is to understand that the strategy for the study of the impact of eucalyptus plantations for certification is based mainly on the presentation of the highly degraded character of the area to install monoculture (usually pasture areas) and in an attempt to affirm and demonstrate that eucalyptus silviculture would present an improvement in the conditions of the area, even being a potentially polluting activity. Although eucalyptus afforestation is admitted to be less environmentally degrading than previous pastures (a highly controversial issue), this does not elude the question whether degrading activity, simply because it is less degrading than the previous one, merit, in this case, certification as a clean development mechanism for generating carbon credits. This, of course, can only be answered in concrete cases, but the main indicator to guide the answer must be to avoid the paradox of the

“polluter-creditor” in this article.

Given the above, taking into account that the objective of the mechanism should be achieved through the adoption of measures to ensure sustainable development, the use of exotic species can be adduced by itself does not prevent the establishment of certifiable carbon sinks for the perception of carbon credits, however, in the analysis of the concrete case, it should be evident that all other norms and principles of environmental law are complied with. It occurs that the afforestation by eucalyptus, by its characteristics, would hardly escape the configuration as a polluting activity, according to the classifications and characterizations existing in the legal and CONAMA regulations. Thus, in the case of eucalyptus, the backsight of the polluter-creditor figure, if they receive certification of carbon credit. This is not to say that the eucalyptus plantation should not be authorized and licensed environmentally. But one should license it as a polluting activity, something quite different from certifying it as environmentally credible.

FINAL CONSIDERATIONS

From the evaluation of the problems presented in the introduction and the testing of the hypotheses carried out in the development of this work, we can systematize the following conclusive considerations:

1) The international regulation of the Clean Development Mechanisms and its internalization in the Brazilian system has, in the abstract, a sufficient constitutional adequacy, with the environmental model foreseen by CRFB/88;

2) However, the evaluation of the (dis) encounters of this normative with the other environmental regulations, in the Brazilian juridical experience, reveals the possibility of conflicting and paradoxical concrete situations, especially regarding the hypothesis of certification of carbon credits for monoculture and/or forestry silviculture with the priority planting of exotic species.

3) The constitutionally adequate understanding of the concept of sustainable development reveals in its multifaceted, multidimensional, complex and inclusive character, a referent for the correct treatment of such situations, but it must be taken seriously when environmental jurisdiction

is being administrative or judicial.

4) In the qualitative analysis of the cases of approval by the competent authority for the certification of carbon credits to forestry projects in Brazil (three cases), in two of them the contradiction of the constitution of a paradoxical figure of a “polluter-creditor” activity incompatible with the Brazilian jusambiental principle, if it is correctly interpreted.

5) The problem, however, does not appear to be in the clash between international and national regulations, but the need for a more careful evaluation and interpretation by the designated national authority, with a view to taking seriously an adequate constitutional understanding of sustainable development and illation with the principles and rules of Brazilian environmental law.

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