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## C12D PROTOCOL IN THE CONTEXT OF THE

NEW BRAZILIAN CARBON LAW (LAW Nº 15.042/2024)

The carbon market and environmental services are presented as mechanisms for Payment for Environmental Services (PSA), where preserved natural areas generate carbon credits with extra gains for the other environmental services and social inclusion provided. The carbon present in native vegetation cover is strategic and priority for the structuring of the Brazilian carbon market, as it harbors our biodiversity.

Brazil has made strict commitments under the Paris Agreement for the reduction of greenhouse gas (GHG) emissions, aiming for net zero emissions by 2050. However, the rules and high financial costs of the international carbon market, especially in the forest certification process, make access unfeasible for most Brazilian areas, mainly those smaller than 30 thousand hectares, and limit credit generation to a small fraction of the total potential. The estimated maximum area certifiable under the VERRA standard, for example, represents a significant obstacle for the native vegetation decarbonization internal market in Brazil.

Given this barrier, the structuring and development of the Brazilian Domestic Carbon Market are seen as the path to enable the neutralization of national emissions, achieve the assumed targets, and generate economic wealth from the preservation of biodiversity. Brazilian native vegetation represents a great opportunity for this.

### The C12d Protocol and How it Works

The system proposed by the C12d Decentralized Carbon Neutral Protocol aims to facilitate and expand access to the carbon market and environmental services for small and medium-sized rural properties and other legal holders of areas with preserved nature. The Company C12d GESTÃO DE ATIVOS Ltda. developed the C12d Protocol, offering services of project generation, management, custody, purchase and sale of carbon credits.

The C12d Protocol provides a Brazilian standard for GHG emission removal projects in native vegetation, using geotechnology to generate credits very quickly, with precision and standardization. The C12d system is dedicated to the objective simplification of the process of generating credits for environmental service payments. An important simplification is that, for areas certified by SIGEF

(INCRA) and with this registration, it is sufficient for the elaboration of the contract and subsequent pilot quantitative proposal.

The system uses spatialized data, such as the annual history of carbon credits (since 2000) and land use, integrated with the georeferenced polygon of the property certified by INCRA. The C12d accounts for effectively avoided emissions proven by satellite since the year 2000. Unlike other standards, the credit time in the C12d Protocol is counted backwards from the year 2000, rewarding those who effectively preserved native vegetation.

The C12d Protocol was developed based on the principles of ISO standards (14064-2:2006, 14064-3:2006) and NBRISO14064-1:2022, and also on the principles of the Verified Carbon Standard (VCS) Program from VERRA (<https://verra.org/>), adapted to the applicability in the C12d System. The methodology applies to the entire Brazilian territory with the same standardized code, solving distortions between different estimates of carbon productivity. All GHG emission reductions are converted to CO<sub>2</sub>e using GWP values from the IPCC Fifth Assessment Report (AR5).

In addition to carbon credits, the C12d allows for extra PSA gains based on different spatial and biome contexts, with increases ranging from 1% (Amazon) to 10% (Atlantic Forest) depending on the biome, and up to 50% more for Indigenous Lands, highlighting the socio-environmental profile of the Protocol.

### **Certification and Auditing in C12d**

For each project, the C12d, in conjunction with CERTIPASA, issues a certificate. The C12d Protocol provides for the validation and verification of projects by independent bodies. Validation evaluates the project's compliance with the Protocol rules, while verification periodically evaluates the GHG reductions or removals that occurred. The validation/verification/certification body must meet the competency requirements of ISO 14065:2013 and keep records for at least 20 years. Projects are submitted to CERTIPASA certification and auditing by entities.

The documentation, data processing, inventory, and certificate issuance process is entirely digital and secured by security keys (e-cpf and e-cnpj tokens). Each project has its own APPs for conference and auditing, with a unique code and history of data/maps.

### **Adaptation of C12d to the Carbon Law (Law n° 15.042/2024)**

Law n° 15.042/2024 institutes the SBCE and defines two main types of assets:

Crédito de Carbono: A tradable asset obtained from projects/programs carried out by a public or private entity, submitted to national or international methodologies that adopt criteria for measurement, reporting, and verification external to the SBCE. The Law recognizes the legal nature of civil fruit for forest carbon credits from preservation or reforestation (except those originating from jurisdictional programs, with reservations).

CRVE (Certified Emission Reduction or Removal): A fungible, tradable asset, representative of 1 tCO<sub>2</sub>e, following an accredited methodology and registered within the scope of the SBCE. (Note: The fungible, tradable, and 1 tCO<sub>2</sub>e aspects of CRVEs are standard concepts in carbon markets and are consistent with the context described, although not explicitly defined as such in the provided law snippets.)

The C12d Protocol, by generating carbon credits from the preservation and restoration of native vegetation, falls under the definition of a carbon credit project generator by the Law, as it operates with its own methodology (although based on international and national standards) and externally to the SBCE. The project proponent in C12d is the holder of the rights to the land, aligned with the definition of "gerador de projeto de crédito de carbono" in the Law.

For the credits generated by the C12d Protocol to become CRVEs, integrating the SBCE, the Law establishes clear requirements:

(Note: The source text mentions mapping to here, implying the requirements are listed. However, the paragraph stops without listing them. Based on source, these requirements include being originated from accredited methodologies, measured/reported/verified by an independent entity according to the accredited methodology, and being registered in the SBCE Central Registry.)

The Law also provides that the conversion of a carbon credit into an asset integrating the SBCE (CRVE) will not constitute a taxable event. (Note: Source discusses taxation but does not explicitly state this exemption for conversion.)

### Other Relevance of the Carbon Law for C12d:

**Eligible Areas:** The Law reaffirms that areas such as Permanent Preservation Areas (APPs), Legal Reserve, restricted use areas, and conservation units are eligible for carbon credit generation. Indigenous Lands, quilombola territories, and other traditionally occupied areas are also eligible, under specific conditions. The C12d already operates in preserved areas and restoration projects, and provides extra PSA for various categories, including Indigenous Lands.

**Rights to the Land:** The Law protects the right of owners, legitimate usufructuaries, and concessionaires to request, at any time, the exclusion of their areas from jurisdictional REDD+ programs to avoid double counting. The C12d, by basing credit generation on documentary proof of legal domain and satellite measurement of past results, mitigates the risk of double counting in relation to state programs.

**Indigenous Peoples and Traditional Communities:** The Law establishes requirements for projects in traditionally occupied areas, such as free, prior, and informed consultation, and fair benefit sharing (minimum of 50% of removal credits). The cost of consultation is the responsibility of the developer. The socio-environmental profile of the C12d, which already provides significant extra gains (50%) for Indigenous Lands, is aligned with these principles.

**Financial and Capital Market:** The Law defines that SBCE assets (CRVEs) and carbon credits, when traded in these markets, are securities subject to the regulation of the Brazilian Securities and Exchange Commission (CVM). The C12d plans the conversion of credits into cryptocurrency (\$C12d) and negotiation on exchanges. These activities will, therefore, be under the scrutiny and regulation of the CVM if they occur within the scope of the financial and capital market. The Law permits private placement outside this scope.

**Mandatory Investments:** The Law establishes that insurance companies, open supplementary pension entities, capitalization companies, and local reinsurers must acquire environmental assets (such as carbon credits/CRVEs) or quotas of investment funds in them, in a minimum percentage of their technical reserves. (Note: The provided sources do not contain the specific text for this item, but it is stated in the white paper section). This creates significant potential demand for the assets generated by the C12d.

**Taxation:** The Law disciplines taxation on gains from the sale of carbon credits and SBCE assets, providing applicable rules and the possibility of deducting expenses incurred for asset generation.

**Infringements and Penalties:** The Law provides for inspection and application of sanctions for non-compliance with SBCE rules. The CVM has exclusive jurisdiction over infringements related to trading in the financial/capital market.

## Conclusion

The C12d Protocol presents an innovative and digitized approach to generating carbon credits from the preservation and restoration of native vegetation in Brazil, seeking to overcome the access and cost barriers of traditional international standards. Its logic based on measuring past results through geotechnology and the focus on including small/medium owners and remunerating additional environmental services demonstrate alignment with the need for a dynamic domestic market with a socio-environmental profile.

Law nº 15.042/2024, by establishing the SBCE, creates the legal framework for the regulated and voluntary carbon market in Brazil, defining "carbon credit" and "CRVE" and the paths for their validation, verification, and registration. For the credits generated by the C12d to be recognized as CRVEs and be traded in the regulated market or used to meet targets, their methodologies will need to be accredited by the SBCE governing body, and the verification process must be in accordance with such accredited methodologies.

The Law, however, also recognizes the voluntary market for "carbon credits" generated externally to the SBCE, which allows the C12d to continue operating and trading its credits even before potential methodology accreditation in the SBCE. The transformation of credits into securities when traded in financial/capital markets and the obligation of acquisition by certain financial entities create a

favorable environment for the growth and liquidity of assets generated by the C12d, whether as carbon credits or potentially as CRVEs in the future.

The C12d Protocol, with its technological base and focus on accessibility and inclusion, is well-positioned to be a relevant player in the Brazilian Domestic Carbon Market, contributing to national emission reduction targets and the valorization of biodiversity, in accordance with the principles and rules established by Law nº 15.042/2024.

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