

Concept Note

Project/Programme Title: Cattle ranching productivity gain and socio-environmental compliance

Country(ies): Brazil

National Designated Authority(ies) (NDA): Ministry of Finance – Secretary of International Affairs

Accredited Entity(ies) (AE): Interamerican Development Bank – IADB

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Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).
- Further information on GCF concept note preparation can be found on GCF website [Funding Projects Fine Print](#).

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	<input type="checkbox"/> Project <input checked="" type="checkbox"/> Programme	A.2. Public or private sector	<input checked="" type="checkbox"/> Public sector <input checked="" type="checkbox"/> Private sector
A.3. Is the CN submitted in response to an RFP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, specify the RFP: _____	A.4. Confidentiality¹	<input checked="" type="checkbox"/> Confidential <input type="checkbox"/> Not confidential
A.5. Indicate the result areas for the project/programme	<p>Mitigation: Reduced emissions from:</p> <input type="checkbox"/> Energy access and power generation <input type="checkbox"/> Low emission transport <input type="checkbox"/> Buildings, cities and industries and appliances <input checked="" type="checkbox"/> Forestry and land use <p>Adaptation: Increased resilience of:</p> <input checked="" type="checkbox"/> Most vulnerable people and communities <input type="checkbox"/> Health and well-being, and food and water security <input type="checkbox"/> Infrastructure and built environment <input checked="" type="checkbox"/> Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO₂e over lifespan)	11.2 million tCO ₂ e (mitigation)	A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)	2,358 farmers
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD 240,589,280	A.9. Indicative GCF funding requested	Amount: USD 122,800,320
A.10. Mark the type of financial instrument requested for the GCF funding	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Reimbursable grant <input checked="" type="checkbox"/> Guarantees <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Subordinated loan <input type="checkbox"/> Senior Loan <input type="checkbox"/> Other: specify _____		
A.11. Estimated duration of project/ programme:	a) disbursement period: b) repayment period, if applicable:	A.12. Estimated project/ Programme lifespan	This refers to the total period over which the investment is effective.
A.13. Is funding from the Project Preparation Facility requested?²	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Other support received <input type="checkbox"/> If so, by who: _____	A.14. ESS category³	<input type="checkbox"/> A or I-1 <input type="checkbox"/> B or I-2 <input type="checkbox"/> C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes <input type="checkbox"/> No <input type="checkbox"/>	A.16. Has the CN been shared with the NDA?	Yes <input type="checkbox"/> No <input type="checkbox"/>
A.17. AMA signed (if submitted by AE)	Yes <input type="checkbox"/> No <input type="checkbox"/> If no, specify the status of AMA negotiations and expected date of signing: _____	A.18. Is the CN included in the Entity Work Programme?	Yes <input type="checkbox"/> No <input type="checkbox"/>
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	<p>Brief summary of the problem statement and climate rationale, objective and selected implementation approach, including the executing entity(ies) and other implementing partners.</p> <p>In order to curb deforestation, comply with the Forest Code and foster the NDCs implementation, the beef supply chain has three main challenges: (i) Technology transfer and good agricultural practices for suppliers, aiming to increase productivity and promote income generation; (ii) Forest restoration and compensation in order to comply with the Forest Code; (iii) Bring ranchers with environmental and labor issues back to the formal market and avoid additional illegalities.</p>		

¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy ([Decision B.12/35](#)) and the Review of the Initial Proposal Approval Process ([Decision B.17/18](#)).

² See [here](#) for access to project preparation support request template and guidelines

³ Refer to the Fund's environmental and social safeguards ([Decision B.07/02](#))

	<p>The main objective is to incorporate into the anchor company's current program a long-term financing component, including socio-environmental targets, combined with low cost technical assistance to farmers.</p>
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B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Describe the climate vulnerabilities and impacts, GHG emissions profile, and mitigation and adaptation needs that the prospective intervention is envisaged to address.

Brazilian GHGs emissions pattern has shifted in the last years. In 2005 emissions from the land use, land use change and forestry (LULUCF) sectors represented 58% of the total emissions in CO₂ equivalent. In 2012, this number shifted to 15% due to deforestation reduction, and the energy and the agricultural sectors became the most important in terms of emissions, representing 37% each (see Figure 1 in Annex). Methane (CH₄) accounts for 62% and nitrous oxide (N₂O) for 38% of the total agricultural emissions (446 million tons of CO₂ equivalent). Residue burning, emissions from soils and enteric fermentation are critical sources for methane emissions, where enteric fermentation from livestock represents 75%, followed by 12% of dairy cattle and 13% from enteric fermentation of other animals, manure, residue burning from sugarcane and rice. The main emissions of N₂O comes from agricultural soils due to manure from animals, the use of synthetic fertilizers and animals in pastures.⁴

Livestock production is a key sector within the Brazilian agriculture, achieving 9.14 million tons of beef in 2016, and 1.88 million tons exported to more than 123 countries. Pastureland comprises around 170 million hectares, with a cattle herd of 220 million animals, with an average productivity of 1.3 animals per hectare. Pasture degradation, productivity gaps, lack of rural assistance and access to rural credit are drivers that affect livestock socio, economic and environmental indicators. Moderate intensification of livestock production, the use of no-tillage cultivation system and the implementation of integrated crop-livestock-forestry systems - ICLFS are key to achieving this scenario.⁵

The past eleven years marked a significant change in the Amazon deforestation rates. In 2017 the annual rate was 6,947 km² compared to 27,772 km² in 2004, which meant a reduction of 75%. The deforestation reduction in the Amazon relies on different policies, notably the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm-2004). Private policies, such as Soybean Moratorium and beef industry zero deforestation commitment, launched in 2006 and 2009, respectively, also have important role on targeting deforestation in the Amazon biome.

In this sense, the ability to improve pasture use and management will play a critical role not just on how the livestock sector evolves, but more importantly, how the land use dynamic advances overtime, allowing the increase in food production per area, reducing GHGs emissions and improving the resilience of the different agricultural systems. The possibility to restore 15 million of degraded pastures will be critical to socio, economic and environmental improvements turning degraded pastures into an enormous asset for Brazil when it comes to low carbon development.

Please indicate how the project fits in with the country's national priorities and its full ownership of the concept. Is the project/programme directly contributing to the country's INDC/NDC or national climate strategies or other plans such as NAMAs, NAPs or equivalent? If so, please describe which priorities identified in these documents the proposed project is aiming to address and/or improve.

Reducing emissions from agriculture is part of the Brazilian efforts, firstly from a voluntary contribution to the Copenhagen Accord. In 2010, Brazil approved a Low Carbon Agriculture Plan combining low carbon practices in agriculture, having pasture restoration and crop-livestock-forest integration as transformational activities to be incentivized. Those practices also comprised the nationally determined contributions (NDCs) to the Paris Agreement, now as part of a package of contributions that Brazil would promote to comply with its 37% emissions reduction target up to 2025 and 43% up to 2030 based on 2005 levels. Moreover, the approval of the Sustainable Development Goals (SDGs) created a broad and long term agenda for sustainable development, comprising clear goals related to food security and nutrition (SDG 2), and environmental challenges (SDGs 12, 13 and 15) closely related to food production.

Brazilian NDCs relies on the contributions of land use and agriculture: eliminate illegal deforestation; forest restoration of 12 million hectares, which is associated to the Forest Code; and strengthen the Low Carbon Agriculture Program (ABC) restoring 15 million hectares of pasturelands and enhancing 5 million hectares of integrated crop-livestock-forestry systems (ICLFS). The opportunity to scale the implementation of these measures will have an incremental role on turning the land use and the agricultural sectors carbon neutral by 2030.

Thus, livestock production will play an important role towards Brazil's contributions to the Paris Agreement. In one side, restoration under the Law on Protection of Native Vegetation could lead to a carbon sequestration of up to 4.5 billion tons

⁴ MCTI, Estimativas anuais de emissões de gases de efeito estufa - 2a edição, 2014.

⁵ Piatto, Marina. Voivodic, Mauricio; Costa Junior, Ciniro. Perspective Imaflora. The road to Brazilian agriculture: increased production with lower emissions. October 2015.

of CO_{2e} in the next 30 years. Add to that, the compensation of Legal Reserve areas would work as an avoided deforestation practice and, therefore, storing carbon on natural vegetation that could be legally converted.

Pasture restoration can have huge positive externalities comprising carbon emissions, biodiversity conservation and water use. Due to the increase of productivity that is predicted to reach 6 @/hectare in 2030 (90 kg/ha), to deforestation reduction and the possibility to slaughter animals in 2 to 3 years, improving carbon and water balance, the dissemination of sustainable livestock practices are key to promote win win low carbon development targets.

There is a clear link between the intensification of livestock through pasture restoration and reducing environmental impacts. The design of policies to incentivize the adoption of pasture restoration and good agricultural practices, especially for small and medium scale ranchers will be fundamental to create a new paradigm to Brazilian livestock.

In order to curb deforestation, comply with the Forest Code and foster the NDCs implementation, the beef supply chain has three main challenges: (i) Technology transfer and good agricultural practices for suppliers, aiming to increase productivity and promote income generation in the sourcing region; (ii) Forest restoration and compensation in order to comply with the Forest Code and conserve native vegetation; (iii) Bring ranchers with environmental and labor issues back to the formal market and avoid additional illegalities.

In this sense, capital, investments and provision of technical assistance is necessary to commit farmers to adopt those technologies. Due to the high ambitions of Brazilian NDC, and high dependency on those technologies to achieve the targets, models for technical assistance provision combined with long-term financing for technology adoption must be designed to be replicated and achieve scale.

Describe the main root causes and barriers (social, gender, fiscal, regulatory, technological, financial, ecological, institutional, etc.) that need to be addressed.

In general terms, cattle ranchers and meatpackers relationship was always marked by short term spot market, lack of technical assistance and challenges towards socio environmental compliance. In these sense, there are, at least, three reasons pushing livestock production systems to become more intensified⁶: to increase return on land (economic reason), to comply with environmental regulations (reason related to the implementation of the Forest Code), to capture carbon in order to compensate methane emissions from animals (associated to Brazilian NDC targets).

Although it is clear that the intensification process is taking place in Brazil, there is the need to develop innovative mechanisms to finance and accelerate this process, together with technical assistance solutions. Agroicone estimates that there are around 170 million ha of pastureland in Brazil, while 43% of the pasture has very low production per ha (up to 45kg/ha/year), concentrated in the Amazon and Cerrado biomes (almost 80% of the total low yield pastureland) (Harfuch et al., 2016⁷).

Appropriated financing mechanisms and technical assistance providers are necessary due to four main reasons:

- Ranchers are risk averse to long term⁸ debts (investment credit) so keeping current levels of productivity can be an optimal solution rather than investing in intensification.
- Due to uncertainties related to land property/tenure, there is a relevant number of ranchers that have no collateral to offer against long term loans, particularly in Cerrado and Amazon biomes. This causes a suboptimal relation between investment/working capital in ranchers' capital structure and an unbalanced loan's regional distribution.
- Financial market is also risk averse in granting long-term loans for ranchers. Environmental liabilities, diversity of production systems and technology level, relationship between ranchers and meat packers based on informal contracts, and lack of farm management are sources of uncertainty for banks.
- Technical assistance is expensive, because technology packages must be adapted for each farm, and this service is only partially included in the credit lines available. Studies indicate that ranchers do not move to a higher technology level without good technical assistance and availability of inputs.

Where relevant, and particularly for private sector project/programme, please describe the key characteristics and dynamics of the sector or market in which the project/programme will operate.

⁶ Intensification is used here as equivalent to good agricultural practices, comprising pasture management, infrastructure, animal wealth and farm management.

⁷ Harfuch, L.; Nassar, A.M.; Zambianco, W.M.; Gurgel, A.C. Modelling Beef and Dairy Sectors' Productivities and their Effects on Land Use Change in Brazil. RESR, Piracicaba-SP, Vol. 52, Nº 02, p. 283-306, Abr/Jun 2016.

⁸ For the financing perspective on rural credit, such as ABC credit for pasture recovery, long-term loans for cattle ranching investments means up to 8 years of payment terms, being 3 years of grace period (on which only interest rates are paid).

The Program pilot is suggested to take place in Rondonia state, Amazon biome. State of Rondonia is characterized by a large presence of smallholders in the rural productive structure. More than 60% of total rural properties are small (below 240 ha). It is the largest share of smallholders in the Amazon region. Small farms are also the majority in the region where the selected anchor company is sourcing cattle (economic radius of 200 km).

Rondonia cattle herd in 2015 reached 13.4 million heads, and represented 6.2% of the country's herd and 25% of the Amazon region's herd. AC plant represented 9.53% of total slaughtered cattle in Rondonia in 2016. While Brazil as a whole decreased meat production in 2015 and 2016, compared to previous years, Rondonia presented the opposite direction, increasing its share on total Brazilian beef production (representing 6% in 2016).

Low productivity pasturelands (production in live cattle per hectare less than 90 kg/ha/year) represents 83% out of 8.9 million ha in Rondonia, while meat production per hectare was only 63 kg/ha in 2015. Pastureland increased 895 thousand ha in the last 10 years in Rondonia (Agroicone, BLUM, 2016). The expansion over native vegetation represented 10% of pastureland increase, despite the fact that productivity also increased by 14% from 2005 to 2015. Those numbers show that there is large space to push productivity levels in a way to displace cattle production expansion over forests. Also, productivity gains are still marginal and productivity levels are still low for the state. Studies show that for each hectare of recovered pastureland (or intensified pasture-based cattle production), production can increase by at least 3 times the previous level.

B.2. Project/Programme description (max. 3 pages)

Describe the expected set of components/outputs and subcomponents/activities to address the above barriers identified that will lead to the expected outcomes.

A technical assistance provider (TAP) enterprise will be set up to provide technical assistance to farmers, focused on the adoption of three technologies: pasture restoration, integrated cropland-livestock-forestry systems (ICLFS) and native vegetation restoration. Technical assistance will be provided for the three phases of the project implementation: assessment and planning, implementation and monitoring.

The TAP will operate with anchor companies, which are agricultural products originators. Anchor companies with verticalized relationship with farmers, providing technical assistance, long term purchasing contracts and inputs are the transformational targets. The TAP will make agreements with anchor companies, which will provide access for its suppliers. The provider will prepare investments projects to farmers and they will present to banks for financing. The anchor company will guarantee the credit to producers on long-term contracts. An impact fund (as GCF) will provide non-reimbursable funds to start the TAP, subsidize technical assistance to producers and de-risking fund for banking loans. GCF will also provide reimbursable funds to compose credit to producers, on ABC Program (rural credit for investments on pasture restoration, ICLFS and forest restoration to medium and large producers) and Pronaf (rural credit to family agriculture). The main objective of this blend fund is improve credit parameters, as interest rates and technical assistance, incentivizing producers to engage into the Program.

Anchor companies have three incentives to be part of this structure: their suppliers will become legally compliant (native vegetation restoration) and more productive (pasture intensification and ICLFS); additional capital for financing the production or strengthen commercial relationships will be raised from external sponsors; technical assistance will be provided at scale and minimizing costs for them and for farmers.

On the first phase of the Program, the TAP will build a program for anchor company's suppliers. The program will be based on the assessment regarding native vegetation and pastures to be restored and will provide technical expertise and financial packages to suppliers in order to engage them into the program.

The first four years are critical for native vegetation restoration activities: project preparation, land preparation and planting, monitoring plants and seeds growth. For pasture restoration, intensification and ICLFS implementation payback for retuning invested capital are four to six years. The proposed timeframe for implementing the pilot is six years. The following milestones are expected to achieve during Program implementation:

Milestone 1: to convince the anchor company to provide information on its suppliers for performing the assessment on native vegetation deficits and pasture intensification potential. (Already accomplished.)

Milestone 2: to size the program according to the number of suppliers to be reached, the amount of investments required, the costs for technical assistance provision and the *in kind* contributions the anchor company will make.

Milestone 3: to elaborate a valuation and financial analysis of the TAP enterprise.

Milestone 4: to create the financing program in the bank that will operate the credit to producers (blending rural credit and GCF funding), having TAP as implementing partner and AC purchase contracts as collateral.

Milestone 5: to select the beneficiaries (suppliers) that will enrol the program and to elaborate the technical project (forest restoration, pasture restoration or ICLFS). To sign contracts with farmers and the anchor company to start the

project implementation. The contract will contain the responsibilities of each partner (TAP facility, farmers and anchor company).

Milestone 6: To start the planting and field operations.

Milestone 7: To monitor the implementation, assessing if the project is achieving expected results.

Solution proposed (see Figures 2 and 3 in Annex)

- To create a long-term financing program with the objective of promoting pasture recovery, ICLFS implementation, Forest Code compliance and environmental and labor requirements compliance.
- Target public: small, medium and large AC cattle suppliers.
- Portfolio will be a combination of ranchers investing in cattle intensification/productivity increase only and ranchers investing in Forest Code compliance and cattle intensification/productivity increase.

- Role of TAP:
 - Implement the long term financing program
 - Structure the financing to producers (prepare individual investment projects).
 - Provide technical assistance for restoration/compensation, pasture intensification and ICLFS implementation
 - Provide inputs for native vegetation restoration (being paid back by producers with rural credit).
 - Provide inputs for technology implementation (pasture recovery, ICLFS)
 - Monitor the investments and report to IADB

- Role of anchor company:
 - Leader of the long term financing program
 - Offer *in kind* contributions to TAP for program implementation.
 - Establish long-term contracts with ranchers for cattle purchase.
 - Offer collateral to funders to reduce producers' financing risks.

- Role of IADB:
 - GCF accredited entity
 - Structure the financing architecture together with TAP and policymakers
 - Structure the financial operation with the selected bank and GCF (blending finance)
 - Develop credit assessment indicators
 - Monitor the Program implementation
 - Report to GCF

- Role of government (policymaker) and public bank (credit operator)
 - Responsible to implement the blending financing structure (using rural credit programs as ABC and Pronaf)
 - Create a fast track for financing producers that are participating in the Program
 - Create de-risking and risk management mechanisms with GCF and IADB
 - Allocate resources

The current meatpacker's protocol monitor more than 7 million hectares in the Amazon Biome to guarantee control of its supply chain. Suppliers are monitored on a daily basis to check: deforestation, overlapping with indigenous reserves and conservation areas and legal problems associated to environment, labor and titling. The Program will also improve the meatpacker protocol on deforestation-free sourcing, incorporating into the system indirect suppliers monitoring. Indirect suppliers are the ones that supply calf for fattening to meatpacker's direct suppliers, and are not yet being monitored in the current meatpacker protocol.

In terms of rationale, please describe the theory of change and provide information on how it serves to shift the development pathway toward a more low-emissions and/or climate resilient direction, in line with the Fund's goals and objectives.

Restoration of degraded native vegetation in private lands is directly associated to the implementation of Brazilian Forest Code (Federal Law number 12.651, May 25th, 2012). The Forest Code establishes the amount of native vegetation that must be protected by private lands. There are two main types of areas: fragile areas (Permanent Preservation Areas – APP) and Legal Reserve (RL). Due to the Forest Code, degraded vegetation will be restored. Estimations indicate that there are 8 million hectares of degraded APP and 11 million hectares of RL (Geolab-Imaflora, <http://www.imaflora.org/atlasagropecuario/>), also called in Brazil as APP and RL deficits. Although RL deficits within a farm can be compensated in another farm, which will not lead to forest restoration, APP must be restored to protect riparian areas, rivers courses and high slopes areas.

Market forces (increase net present value of cattle operations, increase scale and improve profitability) are pushing the cattle sector to increase productivity through pasture restoration, in replace to forest conversion to pastures, and adoption of ICLFS. However, those technologies present high risks for farmers and longer periods of payback. In the case of native vegetation restoration, the possibilities for having economic returns on the forest restored are very limited and implementation costs are high.

Both for cattle technologies (pasture restoration and ICLFS) and native vegetation restoration, technical solutions are customized, because they depend on the location of the farm (Biome, soil types, rainfall, etc.) and the current degradation levels. Individual assessments are, therefore, necessary. Techniques for restoration, pasture management and forest plantation requires experts because they are not disseminated in the daily activities of farmers.

Therefore, in order to trigger the process for restoring degraded native vegetation and speed up the process of adopting high yield pasture management and ICLFS, it is necessary to provide technical assistance. In addition, due to the high ambitions of Brazilian NDC, and high dependency on those technologies to achieve the targets, models for technical assistance provision must be designed to be replicated and achieve scale.

In summary, there are at least three innovative mechanisms in the proposed solution.

Innovation 1 - Incorporate structural change on meatpacker current Program: technology for pasture yield increase.

- Establishing a long term financing program for cattle producers for pasture recovery and productivity per hectare increase, with active participation of the meatpacker as anchor company
- Improve the economic returns of cattle rancher, increasing income and affecting the regional economy

Innovation 2: Incorporate socioenvironmental full compliance into a meatpacker Program

- Combining financing for production improvement with financing for Forest Code compliance (restoration and compensation), leveraging the environmental returns of the Program: carbon sink, reduce GHG emissions as cattle slaughter age is reduced, reduce deforestation.
- Include in the monitoring system the so called "indirect suppliers" from cow-calf production system that provides cattle to be fattened to meatpacker's suppliers as some socio-environmental criteria
- Meatpacker will take a pioneer position in the meatpacker industry in Brazil indicating to the market that is supporting compliance to Forest Code and to guarantee deforestation free sourcing since birth to slaughter.

Innovation 3: Provide long term financing combined with TAP facility

- Combine rural credit (ABC Program and Pronaf) and impact fund to reduce costs of financing technology implementation and technical assistance
- Induce producers to adopt technology, improving productivity and comply with environmental law with the correct incentives (financing and TA)

At least three outcomes will be achieved in this Program:

- Reduce the illegality of cattle ranching in the Amazon region (for both commercial and environmental perspectives)
- Reduce deforestation rates by improving productivity levels in the region
- Promote low carbon technologies' adoption in the farm, having the leadership of a meatpacker Program (transformational change of the commercial relationships between farmers and industries).

Having the meatpacker as leader of the Program, since it will be part of the implementation, the commercial arrangements and the long-term financing, this will end as a mindset change of beef supply chain stakeholders.

Describe how activities in the proposal are consistent with national regulatory and legal framework, if applicable.

The legal framework for restoration is set by the Brazilian Forest Code (Law n. 12,651, launched in May 25th, 2012). The Code has been revised in 2012 and represents a solid basis to guide restoration efforts countrywide. The States are in the process of defining local regulations (so-called Programs for Environmental Regularization – Programas de Regularização Ambiental, PRA) for restoration within the Forest Code framework. Three States already have the corresponding laws and regulations, most of the others should have established the rules and regulations until end-2018. One major challenge is that the state environmental agencies have to validate the information and data declared by the individual landowners in the CAR. This process is still advancing slowly, but the validated CAR-entry is a precondition to define legally binding restoration plans.

The legal, regulatory and institutional framework for the National Plan for the Recovery of the Native Vegetation (Plano Nacional de Recuperação da Vegetação Nativa, Planaveg) is currently being set up. It is intended to create a Council in which federal Government, the States and civil society will be represented in order to guide the implementation.

Brazil's Low-Carbon Agricultural Plan (Plano ABC) is one of the sectorial plans devised under the National Policy on Climate Change (Law n. 12,187, launched in December 29th, 2009), comprising the period from 2010 to 2020. Its overall objectives are: reducing greenhouse gas (GHGs) emissions in agriculture, improving the efficiency in the use of natural resources, increasing the resilience of production systems and rural communities and promoting adaptation to climate change in the sector. ABC Plan is composed by seven programs, including pasture recovery, ICLFS and agroforestry systems, planted forests among others. In order to induce ABC technologies implementation, in 2010 was launched official rural credit lines for this purpose (called ABC Program, Central Bank Resolution n. 3,896) as part of the national agricultural policy.

Rural credit is the main policy instrument to support agricultural production and income, and constitutes the country's largest public subsidy to the sector. For the agricultural year 2016-2017, the amount available to producers and agribusinesses under rural credit totaled approximately USD 69 billion. Forest Code stipulates that landowners must register their land in the Rural Environmental Registry (CAR) to be eligible for credit, and there are credit lines for native vegetation restoration (as ABC Ambiental, Pronaf (specific for smallholders), among others). For pasture restoration and ICLFS implementation, Pronaf and ABC Program have specific credit lines, and blending financing with rural credit can be developed in order to induce those technologies' adoption, since the current demand for those investment credit lines is very small.

Describe in what way the Accredited Entity(ies) is well placed to undertake the planned activities and what will be the implementation arrangements with the executing entity(ies) and implementing partners.

To be defined with IADB

Please provide a brief overview of the key financial and operational risks and any mitigation measures identified at this stage.

Setting-up risk 1: reduce technical assistance costs needs non-reimbursable funds (creating a TAP facility). Availability of technical assistance at affordable costs is crucial to commit farmers and anchor companies to invest in native vegetation restoration and ABC technologies. Without grant resources, the alternative is to build a model in which anchor companies and its suppliers share the costs of technical assistance.

Setting-up risk 2: promoting investments in restoration of degraded native vegetation and pastures using wrong techniques, which will not deliver the restoration of the areas. Planning, planting and monitoring the areas are crucial. Setting up risk 3 - Risk for expansion: the subsidized resources must be used for generating a business model for the TAP oriented to reduce technical assistance costs for farmers and anchor companies. If the pilot is not able to prove that costs can be reduced, model expansion will be compromised.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

The GCF is directed to make a significant and ambitious contribution to the global efforts towards attaining the goals set by the international community to combat climate change, and promoting the paradigm shift towards low-emission and climate-resilient development pathways by limiting or reducing greenhouse gas emissions and adapting to the impacts of climate change.

Provide an estimate of the expected impacts aligned with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Although the available credit lines to implement pasture recovery, forest restoration and ICLFS implementation, there are several barriers to access those credit lines and to implement those technologies in the farm.

Loans for cattle producers can be divided in three groups:

- a. 55% of the total: working capital for handling animals, including feed, vaccination, etc. Irrelevant numbers are found on working capital for pastures management showing that ranchers do not use fertilizers and lime
- b. 35% of the total: animal acquisition, including females for reproduction and steers/heifers for fattening and termination.
- c. 11% of the total: pasture recover and planting, soil conservation, infrastructure (fences, etc.) and machinery.

It is clear that cattle producers are highly dependent on the rural credit system and they are conservative with respect to long-term loans. The suboptimal relation between investment and working capital indicates that even the official credit system needs to be improved in order to increase its contribution to the intensification process.

There is a widespread perception that ABC credit line has not been performing well. This perception is based on two broad evidences: the amount of money borrowed has been smaller than the amount available and, as a consequence, the program has not been able to promote the adoption of low carbon technologies as envisaged in ABC Plan strategy.

The suggested Program will base on four activities to induce cattle ranchers on low carbon technologies adoption, as following.

1. Supply chain engagement:

- Map the gaps along livestock value chain that undermine sectorial solutions that would stimulate ranchers to make long-term investments. Previous research identified that different solutions (contracts with meat packers, price premiums for high quality animals, shared collaterals between ranchers and meat packers, etc.) may apply according to cattle producers' profiles
- Identify ranchers' profiles that are more likely to make long-term investments. Classifying ranchers in groups is necessary to reduce risks for the financial market and to increase impacts of private and public policies.
- Develop sustainability indicators (regional and farm levels) to capture the intensity on how intensification can reduce socio-environmental risks. A set of well-developed indicators is available on the GTPS initiative (Brazilian Roundtable on Sustainable Livestock).
- Fulfill the gap of quality technical assistance on the target region (in Rondonia), which is very important not only for implementing the intensification process, but also to reduce the investments risks along the process. Reducing costs and offer quality technical assistance is key for investment success.
- Other steps such as developing training programs, communication strategies, etc. will be required during the building process.

2. Forest Code implementation:

- Forest Code implementation acts in two ways in livestock: it creates costs for ranchers, which are an additional challenge for the purpose of promoting long-term investments. It can also be an opportunity for ranchers generating additional income from land lease or compensation for third farmers (for Legal Reserve compliance)
- Agroicone business cases' analysis (Harfuch et al., 2016⁹) show that cattle rancher financial performance (and investments) can increase if it combines compensation of Legal Reserve supply (with forest natural regeneration in very low pasture yield areas) and intensification of cattle activity (using less pastureland in the farm than initially)
- Either way, the Forest Code is an institutional factor with great strength to push the intensification process forward and potential source of funding.

3. Build a fund that will operate reducing risks of the long-term investments and creating the incentives to bring banks and value chain operators:

- The risk-reducing fund should be combined with bank's loans stimulating the financial sector to be more aggressive and interested in financing intensification technologies. It would be offered to ranchers a bundle of credit making this combination attractive for farmers.
- The risk-reducing fund should partially share financing risks with banks, anchor companies and the government (assuming that the government will indirectly participate through the official credit system).
- The risk-reducing fund could cover costs associated to the financing process which are now on ranchers' shoulders. Those costs, such as investment project preparation, technical services, etc., can be optimized and diluted along the ranchers and the value chain operators by the TAP, scaling-up and reducing costs.
- Field studies interviewing cattle farmer in the Amazon region (in Para and Mato Grosso states) show that financing oriented technical assistance, itself, is a necessary condition for implementing technologies and reducing the financial risks. Lack of farmer knowledge and specific technical assistance (and its high costs) were identified as key barriers for implementing technologies in the cattle ranching farm.

4. Develop the financing structure with the fund (GCF), public bank (rural credit operator) and anchor company (AC) combined with technical assistance provider (TAP):

- GCF can be the de-risking fund and, also, combine financing with rural credit. Reducing the operation risks with lower costs of financing is key to engage producers into the Program
- Banco do Brasil and Banco da Amazonia are the public banks that should be part of the Program, financing Pronaf and ABC Program. The TAP facility will develop the investment projects to producers present to banks. TAP also needs to be in the list of companies that can supply inputs and services for producers under rural credit financing

⁹ Harfuch, L.; Palauro, G.; Bachion, L.; Costa, K.; Romeiro, M.; Basso, I.; Kimura, W. Sustainable intensification of cattle ranching in Mato Grosso. INPUT, 2017. Available at: <http://www.inputbrasil.org/publicacoes/intensificacao-sustentavel-da-pecuaria-de-corte-em-mato-grosso/>

- Anchor company needs to provide also part of the guarantees for financing, considering its suppliers' portfolio. Also, AC can provide in kind monitoring system of the Program and report to banks, TAP and fund.

The suggested AC already has a short-term financing and technical assistance Program. It has a technical protocol for cattle raising and aims to have a fattened cattle with 24 months old and with 21 @ (378 kg) of carcass weight. This is a unique program in the beef sector that finance cattle ranchers directly, and provides technical assistance.

Currently the program finance nutritional inputs, limited to R\$ 400 thousand by rancher, with a six months contract period. The interest rate is lower than current market loan rates for rural producers (except compared to official rural credit) and the producer is committed to pay in carcass weight when the cattle is sold/delivered to AC. This is not only a commercial arrangement, but also a risk management tool to protect the rancher from cattle prices and input costs volatilities.

The producer guarantee the supply of animals to AC, and the company uses own funds to finance the producer, mainly funding with CPR (Rural Producer Certificate) operations (financial note backed on cattle). In 2016, the program reached 40 thousand animals nationally, representing 3% of total cattle slaughtered at AC. There is a high potential to improve the program and increase its outreach.

AC program is currently oriented to promote uniquely production improvement. The innovation is to incorporate on it socioenvironmental targets. Therefore, a long-term component for financing pasture recovery, ICLFS and compliance with the Forest Code (forest restoration and recovery) will be developed and offered to ranchers through the AC program. The Program will have funding (and de-risking fund) from GCF, official rural credit combined with TAP, and AC will cover producers' guarantees for funders and, also, provide *in kind* Program monitoring in terms of compliance with no deforestation, monitor deforestation of indirect suppliers (producers that supply other producers for fattening), monitor other illegalities of suppliers.

The project can be designed to targeting all suppliers of the meatpacker's selected plant in Rondonia state. From 2,358 registered suppliers, AC sourced cattle from 1,264 suppliers and slaughtered 169.2 thousand animals in 2016. In alignment with the rural structure of the region, AC is sourcing cattle predominantly from smallholders: 91% of AC suppliers are small, delivering less than 400 animals/year. AC plant concentrates 64% of total cattle sourcing from smallholders within the AC group. On average, AC suppliers deliver 65 heads/year. The average farm size within the group of suppliers is 241 ha.

The 1,153 smallholders, although they represent 91% of total suppliers, are responsible only for 45% of AC cattle sourcing, indicating that there is strong potential for productivity improvement in the smallholders' suppliers group. Important to mention that the AC has a list of 131 farmers blocked due to non-compliance to no deforestation, 45 of IBAMA embargoed areas, 1 slavery-alike labor, 9 with overlapping with indigenous reserves and 6 with conservation units. Bringing producers with embargoed areas and deforestation to formal beef market is important to avoid leakage of non-compliant producers and illegality in the supply chain. As a result, the suggested Program should also focus on restore the areas that were illegally deforested.

Current average stock rate is only 1.3 heads per ha, with a large potential to increase by adopting pasture restoration (intensification) and ICLFS technologies. The estimated pastureland of AC plant suppliers is 308,090 ha, and delivered cattle to meatpacker reached 169,211 heads in 2016. Investments on pasture intensification (pasture restoration and GAP) varies from R\$ 350 million to R\$ 571 million, depending on pasture degradation level and considering that only 30% of total pastureland is intensified¹⁰.

The estimated Forest Code deficits comprises 838 farmers (36% of total registered suppliers), from which 34% of them are smallholders (up to 240 ha of total farm size), 54% are medium farmers (up to 1,000 ha farm size) and 12% are large farmers (more than 1,000 ha). Total APP and Legal Reserve estimated deficits sum 50,149 ha, and requires investments from R\$ 54 million to R\$ 219 million, depending on restoration techniques and local inputs' costs.

Investments (non-reimbursable funds) around R\$ 4 million (representing an estimative of 1% of total project costs) is necessary in order to structure the TAP facility. It is highly recommended that part of forest restoration costs of the farm be non-reimbursable (as technical assistance), as a carrot to producers to engage into the Program.

¹⁰ For this estimated values, ICLFS implementation investments were not considered, only pasture intensification technologies. The implementation of each technology will depend on ranchers' need.

Summary of Program targets

	Pasture restoration and/or ICLFS implementation		
	Current situation	Aspirational indicator ¹¹	Situation achieved
Number of farmers	2,358	2,358	2,358
Pastureland (ha)	308,090	184,854	308,090
Cattle herd (heads)	400,517	453,300	613,507
Stock Rate (heads/ha)	1.30	2.45	1.99
Cattle delivered (heads)	169,211	144,256	267,500
Beef Production (tons)	43,149	41,113	72,540

	Forest Code Compliance	
	Current situation	Aspirational indicator
Number of farmers	838	838
APP and RL Deficits (ha)	50,149	0

Summary of Program investments estimates

	Investment (BRL)			
	CAPEX		Technical Assistance	
	Min. Cost	Max. Cost	Min. Cost	Max. Cost
Cattle intensification	339.502.789	554.561.890	10.858.590	16.287.885
Forest Code Compliance	47.822.026	206.557.361	6.293.757	12.587.513
Project implementation structuring			3.949.973	3.949.973
Total	387.324.815	761.119.251	21.102.320	32.825.371

For the Program indicators having the parameters of the table above, GHG emissions are estimated to reduce 6.2 million tCO₂e on LULUCF sector, considering pasture recovery and forest restoration in a 10-year period. Including avoided deforestation, these estimates increase to 11.2 million tCO₂e of mitigation. Compared to a reference scenario (without intensification and restoration), the reduction of GHG emissions can achieve 188%, and cattle ranching can become a carbon sink activity considering a 10-year period.

For the pilot Program is necessary to combine grants (non-reimbursable) with loans. Non-reimbursable funds are necessary to structure the Program, creating the TAP facility and technical assistance for forest restoration. The estimated amount needed is R\$ 16.5 million.

Reimbursable funds are needed to invest on pasture recovery (and intensification), forest restoration and ICLFS implementation. The suggestion is to combine official rural credit resources to implement the selected technologies, as ABC Program to finance medium and large producers (ABC Recuperação, ABC Ambiental and ABC Integração), and Pronaf for smallholders. The amount of loans needed is estimated at R\$ 777.4 million. This amount also depends on individual farmer assessment, considering the level of pasture degradation and restoration technique implemented. The table above shows the minimum (min.) and maximum (max.) estimated investments and costs.

Pronaf has already very competitive financing conditions, with interest rate of 2.5% per year (Annual Plan 2017/18) for pasture intensification, integrated systems and restoration. The key challenge of the Program is to engage stallholders into the project and provide technical assistance with low costs.

In the case of medium and large producers, ABC is the most indicated credit lines, operated by Banco do Brasil, together with FNO Verde (available only for the North region), operated by Banco da Amazonia. The parameters of rural credit are defined by the Agriculture and Livestock Annual Plan for each crop year.

The suggested Program structure and operation details need to be discussed with GCF, IADB, Banco do Brasil, Banco da Amazonia and the anchor company.

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

¹¹ For the Program implementation, is expected to achieve all suppliers, but only 30% of pastureland will be recovered and/or implement ICLFS. On this intensified land, cattle delivered will increase significantly, increasing total cattle delivered to meatpacker by 58%.

Please describe how engagement among the NDA, AE and/or other relevant stakeholders in the country has taken place and what further engagement will be undertaken as the concept is developed into a funding proposal.

Federal government: strengthen the ABC Program (rural credit) is key for the success of the pilots, given that pilots are promoting the use of the technologies supported by the program. ABC is managed by BNDES and Banco do Brasil or Banco da Amazônia need to operate ABC and Pronaf credit to farmers.

Embrapa: the Brazilian Agricultural Research Company is the main developer of the ABC technologies. The pilots should partner with Embrapa.

Anchor company: engaging a meatpacker for pilot implementation is crucial for the proof of concept.

Cattle ranchers: are key to be engaged into the program, since will be implemented in the farm the solutions proposed to increase pasture productivity, environmental compliance and long term contract with meatpacker.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Please provide an estimate of the total cost per component/output and disaggregate by source of financing.

Component/Output*	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Pasture intensification	168,049,058	84,024,529	Subordinated loan	84,024,529	Rural credit	Banco do Brasil and Banco da Amazonia
Forest Code Compliance	62,593,140	31,296,570	Subordinated loan	31,296,570	Rural credit	
Project implementation structuring (and TAP facility creation)	1,196,962	1,196,962	Grant (non-reimbursable)	0		
Technical assistance (pasture intensification)	4,935,723	2,467,861	Subordinated loan	2,467,861	Rural credit	Banco do Brasil and Banco da Amazonia
Technical assistance (forest restoration)	3,814,398	3,814,398	Grant (non-reimbursable)	0		
Indicative total cost (USD)	240,589,280	122,800,320		117,788,960		

*Exchange rate used was 3.30 BRL/USD

For private sector proposal, provide an overview (diagram) of the proposed financing structure.

C.2. Justification of GCF funding request (max. 1 page)

Explain why the Project/ Programme requires GCF funding, i.e. explaining why this is not financed by the public and/ or private sector(s) of the country.

As mentioned above, appropriated financing mechanisms and technical assistance providers are necessary due to four main reasons:

- Ranchers are risk averse to long term¹² debts (investment credit) so keeping current levels of productivity can be an optimal solution rather than investing in intensification.
- Due to uncertainties related to land property/tenure, there is a relevant number of ranchers that have no collateral to offer against long-term loans, particularly in Cerrado and Amazon biomes. This causes a suboptimal relation between investment/working capital in ranchers' capital structure and an unbalanced loan's regional distribution.

¹² For the financing perspective on rural credit, such as ABC credit for pasture recovery, long term loans for cattle ranching investments means up to 8 years of payment terms, being 3 years of grace period (on which only interest rates are paid).

- Financial market is also risk averse in granting long-term loans for ranchers. Environmental liabilities, diversity of production systems and technology level, relationship between ranchers and meat packers based on informal contracts, and lack of farm management are sources of uncertainty for banks.
- Technical assistance is expensive, because technology packages must be adapted for each farm, and this service is only partially included in the credit lines available. Studies indicate that ranchers do not move to a higher technology level without good technical assistance and availability of inputs.

The proof of concept combining technical assistance, long-term financing and beef supply chain engagement seeks to overcome those barriers with GCF and ABC Program funding, with high potential to be replicated and scaled up.

Describe alternative funding options for the same activities being proposed in the Concept Note, including an analysis of the barriers for the potential beneficiaries to access to finance and the constraints of public and private sources of funding.

As described above, meatpacker operating in the Amazon region has at least four main challenges:

- Transfer of technology and good producing practices for ranchers aiming to increase cattle production and promote income generation in the sourcing region.
- Promote productivity increase in slaughterhouse's cattle suppliers.
- Lack of capital for ranchers to invest on productivity increase and Forest Code compliance.
- Bring suppliers to meatpacker's sourcing system that are blocked due to legal issues associated to deforestation, environmental and labor problems.

The proposed architecture still depends on non-reimbursable resources, which is a limitation for scaling. If the TAP facility is able to provide technical assistance efficiently, a large share of the costs covered by the non-reimbursable resources can be shared between suppliers and companies. This is key to make viable scaling.

On the other hand, the architecture is efficient for companies originating and processing agricultural products due to the fact that it reduces capital and administrative costs for companies without jeopardizing the origination strategy. Also, it replicates the barter structure, which is an input supply practice well dominated by companies.

The main objective of the suggested program is to incorporate into the anchor company's current program a long-term financing component, including socio-environmental targets. If the pilot is successful, farmers and anchor companies will establish long-term commercial relationships. Long-term relationship allows for innovation in financing that can target not only working capital but also investments. In order to scale up, the long-term financing program can be extended to all suppliers of the anchor company, at least in the Amazon biome.

Justify the rationale and level of concessionality of the GCF financial instrument(s) as well as how this will be passed on to the end-users and beneficiaries. Justify why this is the minimum required to make the investment viable and most efficient considering the incremental cost or risk premium of the Project/ Programme (refer to Decisions B.12/17; B.10/03; and B.09/04 for more details). The justification for grants and reimbursable grants is mandatory.

The architecture proposed for this pilot is assuming that technical assistance will be provided with low costs to farmers and the capital needed to invest in forest, pasture restoration and ICLFS implementation will be provided with subsidized conditions. In the technical assistance is necessary to combine grant with rural credit resources to reduce costs for farmers. However, in order to keep farmers with "skin on the game", they also must pay for the technical assistance, although subsidized amounts. The turning point for making the pilot viable and with no dependence on grant resources is to reduce costs of technical assistance. In the current stage of the pilot is not possible to indicate for how long grant resources will be necessary. However, for a 6 years project it is perfectly possible to design a payment system in which the costs for farmers will be increased over time until it achieves 100% in the end of the project. To phase out the grant resources and make the pilot viable without grant resources, the agreements between the TAP, the funders, the farmers and the anchor companies should be designed envisaging this transition from a zero cost technical assistance to a full coverage by the supply chain.

In the case of private sector proposal, concessional terms should be minimized and justified as per the Guiding principles applicable to the private sector operations (Decision B.05/07).

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.

Several studies¹³ show that pasture intensification is economic viable, since improves productivity per ha and income. Payback of project investments varies from 4 to 10 years, depending on the farm current productivity levels and on farm size. Those studies also show that environmental compliance can be included on producers' cash flow only on high productivity activity, and long-term financing is required.

The proposed pilot aims to proof the following:

- Long-term financing and (low cost) technical assistance is key for transformational changes on beef supply chain, seeking low carbon emissions, improving yields and beef quality.
- Meatpackers can induce technology adoption by farmers with long-term financing and technical assistance, which will also be tested by the project
- Ranchers will recognize that only improving productivity is possible to increase income, be more competitive and compliant with the law.
- Accessing ABC rural credit will be demystified, reducing the mistrust of the producer to take credit, and ABC Program and meatpackers funding can be sufficient to achieve NDC targets in the long-term.

Monitoring will have three components, combining field visits and monitoring tools (satellite imagery):

- Forest restoration: after implementing restoration, the first 3 years are critical to guarantee that it was successful, with correct interventions as needed
- Pasture restoration and ICLFS implementation: with the implementation in the first year, TAP will need to monitor the correct management of the systems and provide training to farmers and their employees, which can be in partnership with AC
- Reduce deforestation: monitoring deforestation is already being implemented by the AC and this pilot will include monitoring since birth to slaughter, which needs to be developed by this pilot.

For non-grant instruments, explain how the capital invested will be repaid and over what duration of time.

To be defined

D. Supporting documents submitted (OPTIONAL)

- Map indicating the location of the project/programme
- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project
- Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes No

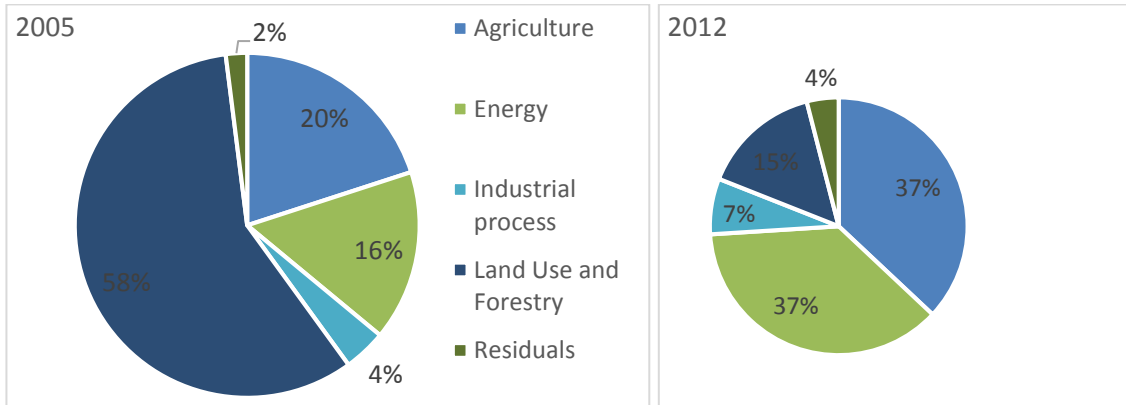
- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes No

¹³ As Harfuch et al. (2016), Harfuch et al. (2017).

ANNEX

Figure 1 - Brazilian GHGs Emissions Profile



Source: MCTI/2014.

Figure 2 – Cattle rancher eligibility for the program

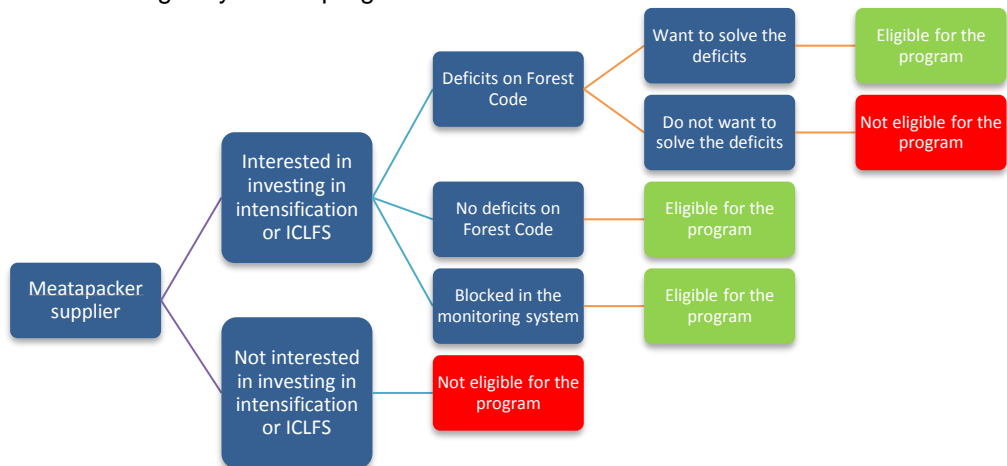
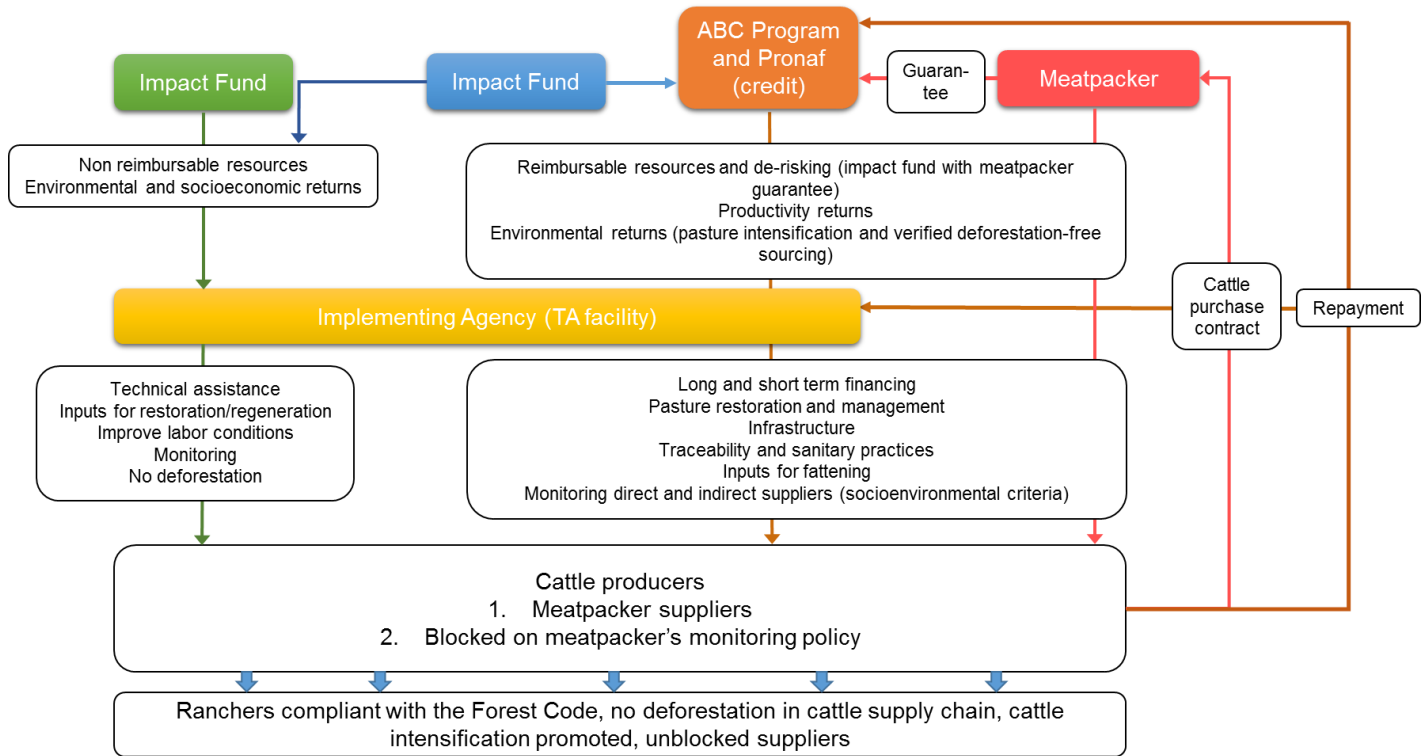


Figure 3 – Program Architecture¹⁴



¹⁴ Program architecture, financial and commercial arrangements described in this concept note is an initial draft to be discussed with main stakeholders involved (IADB, meatpacker, banks, GCF, Ministry of Agriculture, Ministry of Finance and Ministry of Environment).