Title: Supporting technical options and innovative public-private partnerships by linking sustainable beef cattle production and enhanced landscape management

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2018	RP LAM	Loboguerrero, Ana Maria <a.m.loboguerrero@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2, Bilateral	On-going	CIFOR - Center for International Forestry Research - Indonesia	Pacheco, Pablo <p.pacheco@cgiar.org>

Project is working on

Flaship(s)
F3 (Lini): Low emissions development

Region(s)
LAM: Latin America

Project summary

The project will contribute to developing improved technical options, territorial monitoring systems and public-private partnerships by linking sustainable beef cattle production and enhanced landscape management. It will focus on the State of Para, with emphasis in the Municipality of Paragominas, which is the first “Green Municipality”, with plans to up scaling policy options to other five municipalities in Southern Para. The project focuses on: 1) assessing the limits and options of institutional arrangements to supporting low-carbon cattle ranching, 2) undertaking assessments of the economic and technical performance of different production systems and their potential for supporting sustainable ranching and achieve mitigation targets, and 3) establishing a monitoring system to analyze agriculture and landscape dynamics with focus on land use change, production efficiency, eco-system services, and social and economic benefits. The knowledge acquired will inform a local multi-stakeholder platform to influence on development plans at the municipal level.

2. Partners

Partner #1 (Leader)

Institution: CIFOR - Center for International Forestry Research

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Pacheco, Pablo <p.pacheco@cgiar.org>	Activity 2014-35 *Leader*. Activity 2014-40 *Partner*. Activity 2014-41 *Partner*. Activity 2014-42 *Partner*. Activity 2014-391 *Leader*.	HQ

Partner #2

Institution: CIRAD - Centre International de Recherche Agricole et du Developpppement

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Piketty, Marie-Gabrielle <marie-gabrielle.piketty@cirad.fr>	Activity 2014-35 *Partner*.	Montpelier, France
Partner	Tourrand, Jean-François <tourrand@aol.com>	Activity 2014-40 *Partner*.	Montpelier, France
Partner	Poccard-Chapuis, Rene <renepoccard@gmail.com>	Activity 2014-41 *Leader*. Activity 2014-42 *Leader*.	Montpelier, France

Partner #3

Institution: EMBRAPA - Empresa Brasileira de Pesquisa Agropecuária

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Gomes, Mario <mario.gomes@embrapa.br>	Activity 2014-35 *Partner*.	HQ
Partner	Venturieri, Adriano <adriano.venturieri@embrapa.br>	Activity 2014-41 *Partner*. Activity 2014-42 *Partner*.	HQ
Partner	El Husny, Jamil <jamil.husny@embrapa.br>	Activity 2014-40 *Leader*.	HQ

Partner #4

Institution: MPEG - Museum Paraense Emilio Goeldi

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Thalês, Marcelo <marcelo.thales@gmail.com>	Activity 2014-41 *Partner*. Activity 2014-42 *Partner*.	HQ

Lessons regarding your partnerships and possible implications for the coming planning cycle:

Year	Lesson(s)
2016	CIRAD will continue playing an active role in the formulation of technical options for cattle ranching systems and monitoring systems with the support of MPEG. We expect that EMBRAPA will support the project by undertaking the evaluation of production systems, yet there is going to be a need to supervise closely this team for the effective delivery of the expected outcomes. We will continue collaboration with the Municipal Government of Paragominas, SEBRAE and the rural producers association. We will keep linking to Nexus Socioambiental for engaging with key players in the state, banks and industry at state and federal level.

Partnerships overall over the last reporting period:

The partnership with CIRAD has brought important expertise on alternative technical options to improve cattle production systems for large-scale and smallholder farmers, and in devising a monitoring system that will apply to the territorial scale. A long bureaucratic process impeded a more active involvement of EMBRAPA, which is a key partnership for the technical, economic and environmental performance of production systems, yet we will finally have been able to establish and negotiate an agreement with them. We were not able to formalize our partnership with MPEG that is supporting on the monitoring system under the CIRAD contract.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
District	-2.974	-47.4236	Paragominas
District	-2.974	-47.4126	Paragominas
District	-2.9575	-47.4016	Paragominas
District	-2.9795	-47.4126	paragominas
District	-2.9685	-47.4071	Paragominas

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:
The project will develop improved technical and institutional options for the expansion of sustainable beef-cattle ranching in Eastern Amazon by connecting supply chains to landscape management, contributing to reduce by 50% carbon emissions from beef-cattle production in Paragominas, the first ?Green Municipality, with potential to additionally reduce 30% carbon emission savings by extending the technical options and public-private partnerships to five municipalities in Southern Para by 2019.

Annual progress towards outcome (end of 2016*): Established actions for assessing economic and technical performance of different production systems and their potential for low-carbon cattle ranching, and build the foundations through developing the framework and indicators, and structuring a GIS based system for monitoring landscape performance including production dynamics and eco-system services linked to beef and agriculture development

Annual progress towards project outcome in the current reporting cycle (2016*): The project is in process of building more refine baselines and estimates on contributions to carbon emissions reduction by improving existing pasture management systems and the introduction of forest forage systems. In 2016, the project intervened in supporting management systems in five properties comprising a total of 13,000 hectares and 12 smallholders with a total of about 1,000 hectares. The objective is to consolidate the establishment of new practices (e.g. introduction of legumes, bank of proteins, integration crops, livestock and trees) with improved pasture management in this properties that will enable wider adoption over time. Main strategy for scaling up is to monitor performance of the municipality at the territorial level, and to stimulate the discussion on technical options that could improve landscape management for the whole municipal jurisdiction. While it was expected that a multi-stakeholder platform would be created to formulate with them a plan for improving municipal territorial performance, that has not been possible to achieve. Yet, there have been maintained discussions and strong interactions with the Municipal Government and SEBRAE in order to contribute to building a municipal development plan for 2030, and bilateral interactions have been established with the rural producer association as the key beneficiaries of the A few contacts have been established with the Green Municipalities Secretary in the State of Para, yet these links have to be strengthened.
How communication and engagement activities have contributed to achieving your Project outcomes:* Engagement has taken place at three different levels and with different intensity. First, stronger engagement has been established with the groups of producers supported by the project, and with other producers interested to adopt improved practices. Second, engagement has been established with the Municipal Government and SEBRAE to provide inputs to the development plan for 2030, yet political shifts have slowed down this process. Third, some communication actions have been done at the state level with the Secretaries of Agriculture and Green Municipality. Also a debate was organized at a World Bank Conference in 2016.
Evidence documents of progress towards outcomes:* <Not Defined>

Annual progress towards outcome (end of 2015): In place a multi-stakeholder platform in the Municipality of Paragominas involving all relevant local actors from public and private organizations, agree on a road map and common social, economic and environmental targets in support to sustainable beef cattle production

Annual progress towards outcome (end of 2017): A multi-stakeholder platform involving main local actors (e.g. municipal government, rural associations, and state agencies) is equiped with knowledge about improved technical options and strategies for landscape dynamics, which inform dialogues undertaken with public agencies and financial institutions at the state level for developing plans in support to sustainable beef supply

Annual progress towards outcome (end of 2018): Identified mechanisms and established institutional agreements at the municipal level for supporting the production systems with most potential for low-carbon cattle ranching development, and advanced dialogues with state agencies and financial institutions that contribute to scale up improved technical options to the landscape level with explicit consideration of jurisdictional approaches

lessons regarding your Theory of Change and implications for the coming planning cycle; e.g. how have your assumptions changed, or do you have stronger evidence for them:* The Theory of Change of the project is getting more focused. We are going to adopt four main impact pathways at different levels. First, at the municipality level, we are aiming at influencing the planning and decision-making processes of the municipal government in Paragominas through the development and implementation of a monitoring system for the municipal jurisdiction, which provides information to make decisions to improve landscape management. The second engages with rural associations of producers (large-scale and smallholders) in Paragominas to offer technical options to improve the sustainability of cattle production, which also will benefit NGOs and development projects (e.g. TNC). The third is aimed at supporting the Green Municipalities Program, by offering methods and tools that could be instrumental to assess progress across municipalities adopting measures to improve their territorial performance, as a way to guide public investment in the State of Para. The fourth links with financial intermediary institutions (e.g. Banco da Amazonia and Banco do Brazil) and the ABC program through informing on options of alternative production systems that require of financial support.

4.2 CCAFS Outcomes

RP LAM Outcome 2019: National governments formulate and implement NAMAS and LEDS based on improved data on smallholder agricultural GHG emissions and implement equitable policies to strengthen linkages among environment and agriculture in order to avoid deforestation from commodity agriculture, promote restoration to increase carbon sequestration and reduce GHG emissions from livestock and commodities. Research organizations generate improved data on smallholder agricultural GHG emissions. Local governments contribute to the development of NAMAS and LEDS action plans at local level.

Indicator #1: # millions of hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation

2019
Target value: 1900000 **Cumulative target to date:** 2100500 **Target narrative:** Total project's intervention area is 1.9 million ha (Paragominas), 1.1 million ha of forests and 0.8 million ha of agricultural lands. The potential for impact is Southern Para State over 4.2 million ha of forests, and 2.6 million ha of agricultural lands. Participatory action research will support the development of a jurisdiction-based approach in order to reduce emissions from forest conversion by 1) understanding the governance arrangements, 2) determining technical and economic feasibility of different production systems, 3) assessing the social and environmental performance of territories, and 4) supporting a multi-stakeholder platform. **The expected annual gender and social inclusion contribution to this CCAFS outcome:** We will monitor on variables regarding to social inclusion, and provide options for smallholders

2015
Target value: 500 **Cumulative target to date:** 500 **Target narrative:** Activities for monitoring production systems will be established in select experimental farms in about 500 ha, while the work on establishing the monitoring system will embrace the total area of the municipality of Paragominas (1.9 million ha). We will adopt a gradual approach in terms of supporting cattle production systems within a landscape perspective Activity 2014-35: Analysis of the obstacles and barriers for effective transition to more intensive cattle beef production Activity 2014-40: Initiated actions to assess the technical and economic feasibility of different cattle production systems Activity 2014-41: Developed the foundations of a landscape monitoring system for Paragominas municipality Activity 2014-42: Established a multi-stakeholder platform in the municipality involving key local stakeholders **The expected annual gender and social inclusion contribution to this CCAFS outcome:** <Not Defined>

2016
Target value: 200000
Cumulative target to date: 200500
Target achieved: 14000.0
Target narrative: Activities for monitoring the landscape dynamics with focus on production efficiency and eco-system services will be implemented for the total area covered by agricultural land uses and forests. Greater attention will be placed to the areas with improved practices (expected 200,000 ha) under the total agricultural and cattle ranching production (0.8 million ha) within the municipality area where land use dynamics will be monitored (1.9 million ha)
Narrative for your achieved targets, including evidence: In 2016, the project intervened with some experiments to support management systems in five medium- and large-scale farms comprising a total of 13,000 hectares. In addition, the project supported a cooperative with 20 smallholder members out of which 12 are active comprising about 1,000 hectares. The objective is to consolidate the establishment of new practices (e.g. introduction of legumes, bank of proteins, integration crops, livestock and trees) with improved pasture management in this properties that will enable wider adoption over time. Some indirect impacts were achieved in other properties in the smallholder settlements, but this is still difficult to quantify.
Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: We have been working with smallholders as part of the project in order to promote higher social inclusion, mainly by supporting a cooperative for improving dairy production, which is been led by a women. This support may have influence in increasing family income, and greater women involvement in decision-making. This outcome will be verified by some specific work on this.
The expected annual gender and social inclusion contribution to this CCAFS outcome: We will bring more explicitly into our system for monitoring landscape dynamics the assessment of large-scale cattle ranching versus smallholders, with an specific focus on how to capture social inclusion as part of the monitoring

Major Output groups:

- F3 (Lini): Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives

- F3 (Lini): Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:
<Not Defined>

Collaborating with other CRPs

Forests, Trees and Agroforestry
Description of collaboration: There are linkages with the work of Flagship 5 "Global Governance, Trade and Investment" interested in improving the governance of value chains for sustainable supply of agricultural commodities to reduce pressures on forests

4.4 Case Studies

No case studies added

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019
F3 (Lini): Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities **Brief bullet points of your expected annual 2019 contribution towards the selected MOG:** <Not Defined> **Brief`2019 plan of the gender and social inclusion dimension of the expected annual output:** <Not Defined>
F3 (Lini): Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives **Brief bullet points of your expected annual 2019 contribution towards the selected MOG:** <Not Defined> **Brief`2019 plan of the gender and social inclusion dimension of the expected annual output:** <Not Defined>

Major Output groups - 2016
F3 (Lini): Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities **Brief bullet points of your expected annual 2016 contribution towards the selected MOG:** . Built a framework considering institutional innovations to enhance performance of the **Brief summary of your actual 2016 contribution towards the selected MOG:** . Assessed the limits of the "Green Municipality" model and building a framework to embrace more explicit territorial sustainability approach linked to different cattle ranching sustainability pathways **Brief`2016 plan of the gender and social inclusion dimension of the expected annual output:** Framework will make explicit consideration on gender and social inclusion **Summary of the gender and social inclusion dimension of the 2016 outputs:** No specific work on gender

F3 (Lini): Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: . Conducted field experiments on systems with potential to improve efficiency and lower carbon emissions . Built a monitoring systems to assess the performance of land use and ecosystem services

Brief summary of your actual 2016 contribution towards the selected MOG: . Conducted field experiments in medium-and large-scale properties (5) and smallholders (12) to introduce practices that intensify cattle production . In progress the development and implementation of a monitoring system that will allow to identify pressures on forest, forest fires, and land use intensification

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: Indicators on gender and social inclusion will be considered in the system, and other experiences reviewed

Summary of the gender and social inclusion dimension of the 2016 outputs: As already mentioned, support is provided to smallholder for enhancing outcomes of social inclusion, specifically developing options for enhancing smallholder farmers' livelihoods, yet no specific emphasis on gender. We are planning to conduct some specific assessment in 2017 on explicit ways and strategies to enhance gender inclusion.

Major Output groups - 2015

F3 (Lini): Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: . Assess the land use and production outcomes of the

Brief summary of your actual 2015 contribution towards the selected MOG: GIS analysis quantifying the links between deforestation, land tenure and agricultural intensification suggests that the “Green Municipality” model was effective to reduce deforestation but is limited to promote sustainable and low emissions cattle ranching, so additional incentives are required. Five prospective participatory local workshops with local actors suggest ways forward.

Brief`2015 plan of the gender and social inclusion dimension of the expected annual output: No specific gender outcome due to the level of analysis that comprises land use and production trends of the entire municipality with no detailed analysis of data at the farm level, yet attention given to social inclusion of smallholders

Summary of the gender and social inclusion dimension of the 2015 outputs: No specific gender outcomes, yet we are assessing options to improve the performance of smallholders, as part of broader policy and technological options for supporting the transitions to more sustainable land use and agricultural intensification.

F3 (Lini): Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: . Identified production systems with potential to improve efficiency and lower carbon emissions . Provide the foundations for a landscape monitoring systems of land use and ecosystem services

Brief summary of your actual 2015 contribution towards the selected MOG: Diagnostics of cattle ranching systems indicate that legumes and trees are a pertinent way for emissions reductions. Seedlings produced (6 species, 8000 units) and acquired (600 kilos, 12 species) were implanted in 10 farms and 12 managements systems. A GIS data base on land use changes is now available.

Brief`2015 plan of the gender and social inclusion dimension of the expected annual output: No possibilities to incorporate a gender perspective when looking at cost-benefit analysis of production systems, as well as on their potential to improve productivity and reduction of carbon emissions. Yet, issues of scale will be looked at in order to make links with a broader debate on social inclusion

Summary of the gender and social inclusion dimension of the 2015 outputs: No specific gender outcomes, yet we are assessing options to improve the performance of smallholders, as part of broader policy and technological options for supporting the transitions to more sustainable land use and agricultural intensification

Major Output groups - 2014

F3 (Lini): Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief`2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F3 (Lini): Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief`2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

5.2 Deliverables

D11 - Policy brief on the potentials/shortcomings of the policies and arrangements to halt deforestation

Main Information

Type: Reports and other publications

Subtype: Discussion paper/Working paper/White paper

Status: Complete

Year of expected completion: 2016

New expected year: 2017

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Beyond zero deforestation in the Brazilian Amazon: Progress and remaining challenges to sustainable cattle intensification
Description / Abstract: Key messages . A governance approach, combining public policy and private initiatives was effective in slowing down deforestation, but was unable to support a transition to more sustainable production systems. . New technical intensification models must be identified for low-productivity systems in degraded lands, adapted to the biophysical and sociotechnical conditions of the Amazonian landscapes. . Multiple constraints inhibit progress toward sustainable intensification of cattle ranching, and reversing them requires that all such constraints be addressed in a coordinated way. . Designing options that work for all stakeholders, and monitoring and verifying progress of territories toward sustainability is essential to support current public policies and private initiatives.
Publication / Creation date: 02-17-2017
Language: English
Country: Brazil
Keywords: Brazilian Amazon, sustainable intensification, cattle ranching
Citation: 187. Pacheco, P., M.G. Piketty, R. Poccard-Chapuis, I. Garcia-Drigo, J. Chaar El Husny, M. Gomes and J.F. Tourrand. 2017. Beyond zero deforestation in the Brazilian Amazon: Progress and remaining challenges to sustainable cattle intensification. Infobrief. CIFOR, Bogor, Indonesia.
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:

- Pablo - Pacheco<0000-0001-7192-6861>
- Marie-Gabrielle - Piketty
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- Isabel - Garcia-Drigo
- Jamil - Chaar El Husny
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- Jean Francois - Tourrand

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
CIFOR - Center for International Forestry Research	Pacheco, Pablo <p.pacheco@cgiar.org>	Responsible
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CIRAD - Centre International de Recherche Agricole et du Developppement	Poccard-Chapuis, Rene<renepoccard@gmail.com>	Other
EMBRAPA - Empresa Brasileira de Pesquisa Agropecuária	Gomes, Mario<mario.gomes@embrapa.br>	Other
EMBRAPA - Empresa Brasileira de Pesquisa Agropecuária	El Husny, Jamil<jamil.husny@embrapa.br>	Other
CIRAD - Centre International de Recherche Agricole et du Developppement	Tourrand, Jean-François<tourrand@aol.com>	Other

D14 - Identification of low carbon cattle ranching practices based on literature review and field observations

Main Information

Type: Reports and other publications
Subtype: Research workshop report
Status: Complete
Year of expected completion: 2016
New expected year: <Not Defined>
Cross-cutting dimension:
- N/A

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: Not Disseminated
License adopted: No

Deliverable Metadata

Disseminated title: Energy analysis and measurement of the GHG emissions of livestock systems. A comparison of different livestock systems in the Eastern Brazilian Amazon
Description / Abstract: This paper introduces an assessment method based on the Planet method (2002). It aims to measure the energy inputs and outputs, their conversion efficiencies and the greenhouse gas (GHG) emissions in agricultural systems at the farm level. The method was applied to compare smallholder mixed dairy-beef livestock systems (SM) with two extensive and highly technical beef breeding-fattening (BB) and fattening (BF) systems, in the Eastern part of the Brazilian Amazon. It appears that SM farms are the lowest-level input system (13 koe ha-1 of pasture); therefore, they do not require substantial amounts of fossil-energy to produce the outputs. The BF system is the highest level inputs user (60 koe ha-1 of pasture). No significant difference was found for the BB system when compared to the BF and SM systems (38 koe ha-1 of pasture). The farm buildings represented the most important energy input for the SM farms; followed by the purchase of feed supplementation for the BB farms and the purchase of calves for the BF farms. In regards to the energy outputs, the SM system had the lowest production per hectare of pasture (30 koe ha-1 of pasture), while the BB system had an intermediate amount of energy production (68 koe ha-1 of pasture), and the BF system had the highest production (129 koe ha-1 of pasture). The only output from the BB and BF systems is beef, while the SM system produces beef obtained from the sale of male calves to the BF farms and also dairy products (essentially cheese). No significant difference was found between the three systems in terms of energy efficiency (average of 2.3). Finally, the GHG emissions were the highest for the BF system (7814 kg CO2 ha-1 of pasture), intermediate for the BB system (2619 kg of CO2 ha-1 of pasture), and the lowest for the SM system (1702 kg of CO2 ha-1 of pasture). The major source of emissions differed for the three systems - burning practices for the SM farms; enteric fermentation for the BB farms; and the purchase of calves and burning practices for two-thirds and one-third of the BF farms, respectively. The energy inputs and outputs and GHG emissions expressed per ton of live

weight produced were compared between the BB and the BF systems. No significant differences were found for the four indicators.
Publication / Creation date: 02-17-2017
Language: English
Country: Brazil
Keywords: Energy analysis, livestock systems, Brazilian Amazon
Citation: Pachoud, C., R. Poccard-Chapuis, T. Bonaudo, J.F. Tourrand, R. Martins Mauricio(under review). Energy analysis and measurement of the GHG emissions of livestock systems. A comparison of different livestock systems in the Eastern Brazilian Amazon. Submitted to Agricultural Systems
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:
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Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
CIRAD - Centre International de Recherche Agricole et du Developpppement	Poccard-Chapuis, Rene <renepoccard@gmail.com>	Responsible
CIRAD - Centre International de Recherche Agricole et du Developpppement	Tourrand, Jean-François<tourrand@aol.com>	Other

5.3 Project Highlights

No project highlights added

6. Activities

A35 - Conduct analysis of the strengths-weaknesses of the "Green Municipality" initiative

Description: An analysis will be conducted, involving participation of different stakeholders, to assess the implications of broader public-private institutional arrangements, to advance towards low-carbon cattle ranching. The assessment will emphasize: 1) scope of state incentives and regulations and private sector commitments, 2) effectiveness in implementation and their implications across different types of producers, and 3) local perspectives for improvement including different stakeholder views, including gender considerations. The research will primarily draw on qualitative methods (interviews to key informants, focus groups) and participatory discussion of findings, that will contribute to devise options for scaling up the "Green Municipality" model in other municipalities

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: CIFOR - Center for International Forestry Research Pacheco, Pablo <p.pacheco@cgiar.org>
Status: On-going

Overall activity or progress made during this cycle: We have produced analysis on the limits and potentials of the state policies to halt deforestation, and their linkages with the private initiatives. A paper was produced in 2015 to assess the implications of these policies in Paragominas, a panel was put together at the World Bank Conference in March 2016 to discuss the topic, and another one on the agri-value chain conference in December 2016. In addition, an infobrief has been produced (in press), and a paper looking at the limits of these policies and their potential will be published in 2017.

Deliverables in this activity:

- D11: Policy brief on the potentials/shortcomings of the policies and arrangements to halt deforestation
- D12: Progress and limits in the greening of beef supply chains in the Brazilian Amazon
- D13: Analysis on options to scale up a jurisdictional approach in support to sustainability processes

A40 - Assessing the economic and technical performance of different production systems and their potential

Description: Experiments in demonstration farms and research stations will be undertaken in order to assess the eco-efficiency of agricultural practices, some new and others already implemented locally. Complementary dissemination action will be undertaken such as field visits and exchanges. The objective is to provide options on production systems and technologies that work under different farm conditions and ways through which improved practices could be adapted based on better knowledge of costs, risks and gains, and their environmental implications. This information will be used to produce guidelines to be used by financial institutions, extension services and other public local agencies. This activity will draw on existing methdos from EMBRAPA Paragominas applied especially in dairy production.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: EMBRAPA - Empresa Brasileira de Pesquisa Agropecuária El Husny, Jamil <jamil.husny@embrapa.br>
Status: On-going

Overall activity or progress made during this cycle: We are in the process of developing experiments in some select farmes, as mentioned in the outcomes section. These experiments are going to be evaluated from a technical, economic and environmental perspective by EMBRAPA. The assessment of the systems during the winter will be undertaken in 2017, and the assessment of these same systems during the summer will be undertaken in 2018. In addition, some experiments are also conducted by CIRAD in an experimental camp in EMBRAPA, which is expected to serve as a demonstration sites that will attract the attention to farmers interested to introduce innovations. These experiments on production systems include both large-scale landholders and smallholders. This constitute a key activity in the project implementation.

Deliverables in this activity:

- D14: Identification of low carbon cattle ranching practices based on literature review and field observations
- D15: Conduct experiments in demonstration farms and local dissemination actions
- D16: Produce reference guidelines on best economic and technical production systems and practices

A41 - Establish a monitoring system for assessing land use, production, ecosystem services, and socio-economic benefits

Description: Identify and characterize changes taking place in the agroecosystems in Paragominas based on a GIS tool. The aim is to monitor changes in agricultural processes (e.g. intensification, diversification) and ecological processes (e.g. regeneration, conservation, soils and pasture recovery) at the landscape level in order to understand better the dynamics of natural resources use for agricultural production. Complementary information from secondary sources will be included on some key indicators (e.g. production and productivity, processing capacity, infrastructure, migration, demography). The method is largely based on remote sensing using complementary sensors at different spatial (high, medium and low) and temporal (high and low) resolutions. Assessment on biophysical indicators has been tested in the last year. The different steps for setting up this monitoring system will be discussed using participatory approaches with stakeholders.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: CIRAD - Centre International de Recherche Agricole et du Developpement
Poccard-Chapuis, Rene <renepoccard@gmail.com>
Status: On-going

Overall activity or progress made during this cycle: There has been an important progress in the development of the monitoring system to assess territorial performance in the municipality of Paragominas. Main activities conducted in 2016 in order to make progress with this monitoring system were: 1) field work for primary data cartography, 2) new punctual data treatment, about dramatic fire during the dry season (mapping burned and degraded forest), 3) fieldwork and training of TERRACLASS project team, for land use mapping in the amazon, 4) completion of one Master thesis, and beginning of two PhD Thesis related with database, and landscape design in livestock systems. Main intermediate deliverables are a collection of shapefiles database, a report about fire spatial analyze in the GIS database, a report about fieldwork for land-use mapping, and a power-Point presentation describing the system architecture.

Deliverables in this activity:

- D17: Generation of spatial database including biophysical and socio-economic information, and identification of missing information
- D18: Establishment of landscape monitoring system with proposed indicators and output templates
- D19: Elaboration of reports and analysis from landscape monitoring system

A42 - Support a municipal multi-stakeholder platform to discuss technical and policy options

Description: Support a multi-stakeholder platform involving relevant stakeholders in the Municipality of Paragominas (e.g. Municipal Government, public agencies, rural producer organizations, financial institutions, NGOs). This platform will promote discussion, decision making and communication on issues such as: 1) outcomes from institutional arrangements and options to move forward (Activity 1); 2) best production systems and practices, and their trade-offs to accomplish planned targets (Activity 2); and 3) information, analysis and planning for enhancing landscape management, including greater social inclusion (Activity 3). This platform will strengthen public-private partnerships leading to specific agreements at the farm and territorial level, including certification criteria and monitoring.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: CIRAD - Centre International de Recherche Agricole et du Developppement
Poccard-Chapuis, Rene <renepoccard@gmail.com>
Status: On-going

Overall activity or progress made during this cycle: This is the activity with lower progress so far since it has been difficult to set up a multi-stakeholder platform to discuss about the perspectives of territorial planning. Yet, in order to overcome those obstacles, we have organized some bilateral meetings with different group of producers in order to capture their specific perspectives on future development of their sectors in the municipalities, and linked to a process coordinated by SEBRAE, on devising the future scenarios for the Municipality of Paragominas by 2030. We will continue working with the Municipality of Paragominas, and with the sindicato of rural producers as the main local players with potential to mobilize debates about the dynamics and perspectives of sustainable territorial development in the jurisdiction of Paragominas.

Deliverables in this activity:

- D20: Initiated a multi-stakeholder platform with key actors in the municipality of Paragominas
- D21: Roadmap for adopting innovative systems and practices informed by landscape level indicators
- D22: Public-private arrangement to advance sustainable cattle beef under a territorial-based approach

A391 - (BILATERAL) Assessing the implications of agricultural land uses expansion in their interactions with ranching intensification

Description: This activity will assess the implications of expansion of agricultural land uses in their interactions with ranching intensification, and the incentive systems required to support integrated land uses for enhancing sustainable landscape management. It will look at the expansion of soybean production, which is the main agricultural land use along with cattle ranching with a dual effect on ranching dynamics: on the one side, it contributes to displacing cattle herds by taking over low production pasture lands, and on the other side, it helps to restoring land productivity, thus supporting ranching intensification. These land use dynamics will be assessed in southern Para, and business models underpinning them. This analysis will contribute to acquire a wider understanding of land use dynamics at the landscape level in southern Para.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: CIFOR - Center for International Forestry Research Pacheco, Pablo <p.pacheco@cgiar.org>
Status: Complete

Overall activity or progress made during this cycle: <Not Defined>

Deliverables in this activity:

<Not defined>

7. Leverages

No leverages added