

BERTIN LTDA.
ADDENDUM TO THE DISCLOSURE PACKAGE.
FEBRUARY 22, 2007

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INTRODUCTION

The environmental and social documentation for the Berin Ltda. Project was disclosed on November 29, 2006 in the IFC and Bertin websites, the InfoShop and locally in several sites throughout Brazil. The 60-day disclosure period for this Category A project ended on January 29, 2007. During this period Bertin and IFC received comments from a number of sources including the following:

- FBOMS organizations, including: Amigos da Terra, Greenpeace Brasil, IMAFLORA, SOS Mata Atlântica
- AMAZON
- The Sierra Club
- The Nature Conservancy
- Jeanne Erling

- Brazilian Ministry of Agricultural Development
- Brazilian Ministry of the Environment
- Secretary of the Environment of Pará (SECTAN)
- Land Institute of Pará (ITERPA)
- Institute for Agrarian Reform (INCRA)
- Indigenous People's Fund (FUNAI)

- International Bank for Reconstruction and Development (IBRD)

The issues brought forward by these institutions were put together, eliminating duplications and edited for reasons of space, as listed below. All the inputs received were filed in full and are available for review upon request.

- The disclosed documentation does not fully explain the findings of the environmental and social appraisal for Bertin operations other than the slaughterhouse of Marabá and its supply chain.
- The environmental and social impact assessment (ESIA) only covers the slaughterhouse of Marabá and its supply chain, it should have also included other Bertin operations in the Brazilian Amazon (i.e. in the states of Pará, Rôndonia and Mato Grosso). These studies should be undertaken before Board consideration.
- The ESIA is not appropriate in terms of quality and scope.
- The cattle purchasing procedure requires the Rural Property Tax (ITR) as evidence that the cattle farmer's land is legally owned. This is not enough.
- Due to the limited capacity of the institutions and the environment of lawlessness in the Pará, Bertin's slaughterhouse in Marabá will promote the human rights and environmental abuses that are rampant in the state.

- Inputs from civil society should be duly considered and there should be sufficient time to include them in the corresponding action plans. If necessary the Board meeting should be postponed.
- The documentation should include a discussion on green-house gas emissions from the cattle supplied to Bertin. Also, there should be a plan to address these emissions.
- The documentation should also refer to operations whose areas of influence include sensitive matters such as indigenous peoples' and natural reserves in the Amazon and beyond.

IFC Response to Civil Society

- **Attachment I** presents a summary of the findings of IFC's environmental and social appraisal for Bertin operations including that of the slaughterhouse of Marabá and its supply chain.
- The environmental and social impact assessment (ESIA) only covers the slaughterhouse of Marabá and its supply chain because that operation was identified as particularly sensitive and requiring a full ESIA. Other operations in the Amazon Area (tanneries, dog toy plant, shoe factory) were reviewed for their direct impacts, as it was decided that only slaughterhouses require an assessment of their supply chain. During the appraisal period Bertin acquired a slaughterhouse in Agua Boa, Mato Grosso. This plant is not currently in operation and Bertin intends to overhaul it to their corporate standards. IFC requires that the plant and its supply chain be subject to environmental and social review.
- The ESIA of Marabá fulfills the terms of reference provided by Bertin with IFC's approval. The report was submitted to IFC's satisfaction, and the ensuing recommendations, together with the findings of IFC's appraisal of the rest of Bertin's operations, were taken on board for Bertin's Corporate Action Plan (CAP) as shown in **Attachment II**. Specific comments by Greenpeace were responded in full by IFC.
- The Cattle Purchasing Procedure for Marabá (**Attachment III**) takes as key criteria for buying cattle that farmers are not involved in slave labor, land-titling fraud, agrarian violence, illegal deforestation, or encroachment into Indian Lands.
- The procedure originally required the Rural Property Tax (ITR) as evidence that the cattle farmer's land is legally owned. This was amended to include more appropriate documents as shown in **Attachment III**. A discussion on land titling in Pará is presented in **Attachment V**.
- **Attachment IV** includes a discussion on green-house gas emissions from the cattle supplied to Bertin, and outlines Bertin's plans to address these emissions.
- The amended CAP now refers to operations whose areas of influence include sensitive matters such natural reserves (e.g. the slaughterhouse at Itapetinga, BA).

Attachments to the E&S Documentation for Disclosure:

Attachment I – Summary of IFC’s Environmental and Social Review

Attachment II – Corporate Action Plan

Attachment III - Cattle Purchasing Procedure

Attachment IV – Greenhouse Gas Emissions by Cattle

Attachment V - Land Titling Situation in Pará

ATTACHMENT I. SUMMARY OF ENVIRONMENTAL AND SOCIAL APPRAISAL BERTIN LTDA. ADDENDUM TO THE DISCLOSURE PACKAGE

Introduction

The appraisal of the Bertin Ltda. Project has taken two years. IFC first reviewed the project as a Category B, including all operations of Bertin Ltda. (slaughterhouses, tanneries, industrial operations, etc.). When Bertin acquired the Marabá slaughterhouse in late 2005, the classification was changed to A, and IFC required an ESIA of the slaughterhouse and its supply chain.

As a result of the appraisal, a number of issues and their corresponding mitigation or enhancement measures were identified as shown in Table 1 below. Bertin then prepared, and committed to implement, a Corporate Action Plan, as described in Attachment II of this Addendum.

Overview of IFC's Scope of Review

IFC's review of this Category A project consisted of appraising technical, environmental, occupational health and safety and social development information submitted by the project Sponsor including the review of:

- Documentation provided by the sponsor regarding its operations throughout Brazil and of a tannery, currently under construction, in China.
- The following site visits were carried out by social and environmental specialists:
 - Bertin's facilities in Sao Paulo state (November 2004 and May 2006)
 - Bertin's Marabá slaughterhouse and suppliers; first public consultation (April 2006)
 - Bertin's plants and farms in Mato Grosso do Sul and Goiás (May-June 2006)
 - Sacre 2 – Small Hydroelectric Unit (June 2006)
 - Bertin's tanneries and shoe factory in Pará; final public consultation (July 2006)
 - Pre-disclosure consultation (predicted for 19 October, 2006)
 - Bertin's slaughterhouse in China (September, 2006)
 - Bertin's slaughterhouse in Itapetinga, BA (January 2007)
- As a result of the desk review and site visits a Corporate Action Plan (CAP) was prepared to address the various issues identified.
- Environmental and Social Impact Assessment (ESIA) of its Marabá slaughterhouse and its supply chain of cattle ranchers, and the corresponding Environmental and Social Action Plan (ESAP)
- Indigenous Peoples' Development Plan (IPDP) for Sacre 2 hydroelectric plant
- Public Consultation and Disclosure Plan (PCDP)

Description of key Environmental and Social Issues and Mitigation:

The sponsor has presented plans to address these impacts to ensure that the proposed project will upon implementation of the specific agreed measures, comply with the environmental and social requirements - the host country laws and regulations and IFC's Environment and Social Sustainability Policy, its corresponding Performance Standards (PS1 to PS8) and the environmental, health and safety guidelines. The information about how these potential impacts will be addressed by the sponsor/project is summarized in the paragraphs that follow

- *PS1. Social and Environmental Assessment and Management Systems.* Bertin's capacity to undertake adequate environmental and social management of its operations throughout Brazil was reviewed. The company committed to strengthen its operational structure and to develop an Environmental and Social Management System as per the attached Corporate Action Plan (CAP). Bertin also undertook an Environmental and Social Impact Assessment (ESIA) of its Marabá slaughterhouse and the corresponding supply chain. The findings of this assessment resulted in a number of management actions that Bertin has committed to implement as per the Environmental and Social Action Plan (ESAP). The Bertin loan will have positive development impact for the Marabá region, generating job opportunities, tax revenues, diversification of the State economy and making more dynamic the meat productive chain. However, to ensure that the most socially vulnerable local actors in the region will also benefit and not lose out, insofar as environmental and social requirements supply cattle become stricter and land prices may increase over time, mitigation and voluntary measures will be put in place.
- *PS2. Labor and Working Conditions.* Occupational health and safety and labor are an important consideration in Bertin's industrial plants. Bertin's OHS standards are high and fully compliant with Government requirements. In certain areas of Brazil where Bertin operates, such as the state of Pará, these issues may include slave labor in the supply chain. The company will revise its cattle purchasing procedures to avoid buy in cattle from farmers in the "black list" for slave labor.
- *PS3. Pollution Prevention and Abatement.* Slaughterhouses and tanneries have the potential to produce air emissions and odors, as well as wastewater discharges that may contain high concentrations of organic material if not well managed. Bertin's air emissions are very low and the company has adequate control technology to check and correct any deviation from the norm. Wastewater is managed through treatment facilities, which are being continually improved according to an adequate pollution prevention and abatement plan with explicit investment commitments to improve wastewater treatment facilities to achieve IFC guideline limits.
- *PS4. Community Health, Safety and Security.* Community health issues involve biohazards and other emergencies, which are handled adequately by Bertin. Security is a matter of concern as Bertin and suppliers have to deal with the risk of occupations and invasions by landless peasant movements of several of its installations. Bertin has agreed to use good international practices in the use of security personnel, as well as requiring its suppliers to avoid purchase of cattle from farmers convicted of agrarian conflict/human rights violations.

- *PS5. Land Acquisition and Involuntary Resettlement.* Illegal land acquisition and land holding issues are endemic in various areas of Brazil, particularly in the state of Pará. Numerous farmers in Bertin's supply chain have no legal title to land or have fraudulent documentation. Bertin's own farm titles were desk-reviewed by IFC lawyers. Bertin's new purchasing procedures will include a prohibition on buying cattle from farmers convicted of wrong-doing in relation to land acquisition and land holding.
- *PS6. Biodiversity Conservation.* The state of Pará, where Bertin has a slaughterhouse and two tanneries, is in the Amazon area, where protection of biodiversity is a priority. As part of its new purchasing procedures, Bertin has agreed to implement a number of management actions to reduce the risk of further illegal deforestation by its cattle suppliers.
- *PS7. Indigenous Peoples.* The ESIA mapped out a number of indigenous peoples' reserves in the area of influence of their Marabá plant that are well established and protected. Also, in the area of influence of a small hydroelectric unit owned by Bertin, Sacre 2, there is an indigenous reserve. No resettlement was needed to protect the reserve, but Bertin is preparing an Indigenous Peoples' Development Plan for Sacre 2, as required by IFC.
- *PS8. Cultural Heritage.* Also in Sacre 2 a number of archaeological artifacts were found. Bertin, in coordination with the corresponding Brazilian authorities, arranged its rescue, which was done satisfactorily. The artifacts were placed in a museum established in Campo Novo dos Parecis and Indians are predicted to benefit accordingly.

Findings of IFC's Appraisal by Operating Unit

As shown in the attached table, IFC undertook a thorough appraisal of Bertin Ltda's operations throughout Brazil, through desk reviews of the available information supplemented by field visits as necessary. The findings of this review are as follows.

Slaughterhouses. Bertin Ltda has six slaughterhouses in operation, one under construction and one, the recently acquired plant in Agua Boa MT, under refurbishment. The capacity of these plants ranges from 320 heads/day in Itapetinga, BA to 2000 heads/day in Mozarlandia GO. Bertin's operations run according to homogeneous and exacting standards.

Slaughterhouses comprise a reception area for Bertin's own cattle trailers where the papers of the animals are reviewed according to the corresponding bill of transport and other pertinent documentation including vaccination and traceability when applicable. The cattle are then held in pens for 24 under water sprays to clean and soothe the animals prior to slaughter. The small amount of wastewater is produced at this stage is channeled to the treatment facility as explained below.

Bertin's slaughterhouses which IFC visited are clean, airy, well lit and efficiently run. Workers are divided by gender depending on how heavy or delicate the labor is. Killing, skinning, cutting the carcass and boning is handled by men. Cutting the meat prior to packaging and preparing the choice cuts is left to women depending on their skill and experience. All workers have adequate equipment for their corresponding activity and personal protection as appropriate. Workers have regular exercise and rest sessions and are fed in the company's premises. They have also regular medical checkups and attention at the plant as necessary.

The slaughterhouse uses approximately 2000 liters of water per head which gathers high levels of organic matter throughout the process. This wastewater stream joins others in a holding tank for treatment. Skins are separated from the carcass and salted for transportation to one of Bertin's own tanneries and dog-toy factories (which are usually together). Entrails, bones and other parts of the animal are sent to the rendering house to produce chicken or plant feed, and other byproducts are either sold or used in other industries within the Bertin Group (e.g. soap, cosmetics, biodiesel factories). A small amount of waste is taken away by specialized companies for disposal.

The company uses the municipal lines for its electricity needs and produces its own steam in wood-fired boilers. Wood is supplied by certified suppliers with the necessary license from environmental authorities. Boiler emissions are minimal because of the characteristics of the source and the small size of the equipment. Odor is only perceived inside the slaughterhouse and near the rendering house and the wastewater treatment facility. No odor is apparent near or outside the perimeter of the slaughterhouses.

Wastewater treatment typically involves an activated sludge system with mechanical aerators or a series of lagoons (anaerobic, facultative, aerobic and polishing). Wastewater is discharged to the municipal sewer, for those plants in a serviced area, or to a natural body of water. The discharge meets Gob standards but for some parameters is out of compliance with IFC guidelines. The company has developed a two-year Pollution Prevention and Reduction Program to address these issues, and has already started implementation (See attached table). Bertin's pollution prevention and abatement plan includes the installation of biodigestors in all its slaughterhouses, to render the discharge compliant with local regulations and IFC guidelines, and to make use of the methane gas produced as fuel for steam production.

For Bertin's slaughterhouse in Marabá, in addition to evaluating the immediate impacts of the slaughterhouse, Bertin engaged a consultant to study the impacts of its supply chain as required by IFC. The outcomes of the study were disclosed in Bertin's and IFC's websites and in various locations in the state of Pará and at Bertin's headquarters in Lins, SP.

Tanneries. Bertin has 9 tanneries throughout Brazil and is considering another one in Marabá, their capacities range from 800 in Redenção, PA to 7000 in Aguai, SP. The hides arrive salted from a neighboring slaughterhouse or as wet-blue from slaughterhouses further away. In addition to treating and finishing hides, the plant may include an attached dog-toy facility, which produces bone-like dog treats from the edible part of the hide through simple operations involving, washing, disinfecting, cutting, forming and drying.

The equipment are generally new and in good condition. The process is fairly mechanized at the tannery, but manual and labor-intensive at the dog-toy plant. Wastes from the trimming and cutting operations are washed and sold for gelatin and other by-products. Other solids wastes are disposed of in the municipal facility. The tanneries have a number of retention and settlement tanks to recover chemicals (chromium-based) and water. Wastewater is treated in modern activated sludge treatment facilities (screening, primary settlement, aeration, secondary settlement), or in a series of lagoons. The discharge either goes to the municipal sewer, when the plant is located in an industrial park, or to a natural body of water, otherwise. According to Bertin's analytical reports the discharge characteristics are generally compliant with GoB requirements but not with IFC's. As noted above, the company has developed and is implementing a plan to upgrade the treatment facilities at the tanneries to bring them up to IFC requirements. As in the case of the slaughterhouses, power comes from the local grid and a supplementary wood-fired boiler produces steam. The plants are mostly supplied with water by the municipality and its use relatively low in the more modern installations (around 1 m³/100 m² of hides).

There are fire hydrants and extinguishers throughout the plant and offices. Escape routes are well indicated with signs and the exits are not obstructed. The nearest fire department is typically no more than 30 minutes away.

Working conditions meet Brazilian government standards. The working areas are well distributed and have adequate lighting. Workers at the dog-toy facility, mostly women, have adequate rest throughout the working day as well as regular stretching exercises. Workers are permanent employees and receive adequate wages according to the kind of job they undertake plus meals, which are provided free by the company, vacations and statutory workweek and social security. While the company has no discrimination on the basis of gender for any jobs, only men work at the plant and in mid-management jobs, while women have clerical, catering and administrative jobs. There is no child or forced labor.

Bertin has ISO 9001 certification in several of its installations throughout Brazil. Bertin's Corporate Action Plan, as agreed with IFC, includes the development of an integrated Environmental and Social Management System, consistent with ISO 14001 and OHSAS 18001 standards. The ESMS will be implemented gradually throughout its operations, including the tanneries in Pará.

Although not directly part of Bertin Ltda., the company has a joint venture with a Chinese company to build a new tannery in China, located just north-east of Hong Kong. This plant was visited as part of IFC's due diligence. The plant is new, just coming into operation, and was found to be equipped with the most modern computer-controlled process equipment and redundant wastewater treatment facilities. The plant is airy and well-lit with good working conditions. It fully meets IFC guidelines.

Other facilities. Bertin's integrated units include a slaughterhouse and a tannery and, sometimes, a dog toy facility as described above. The industrial unit at Lins-Aguai, also have other associated facilities such as a soap factory and a biodiesel plant currently starting operations. There are also safety shoes and gloves factories that add value to some of the products and byproducts of the tanneries.

These other facilities visited by IFC were clean, well maintained and efficiently operated. Wastewater and solid waste was minimum, mostly domestic, and there were no occupational health and safety issues of concern.

Attachments.

Table 1. Summary of Bertin's Pollution Prevention and Reduction Plan

Table 2. Summary of IFC's Review by Operating Unit

Table 1. Bertin’s Pollution Prevention and Abatement Plan (Summary)

PROGRAM PLANNING	
G O A L S	<p>BASIC DOCUMENT Create an Environmental Policy for the Company, based on principles of: minimum impact on the environment, maintenance of natural resources, applying rationally the technological advances and correcting social and environmental problems.</p> <p>Investments foreseen for the units: Tanning Units</p> <p>Aguai – SP</p> <ul style="list-style-type: none"> - To purchase aeration equipment for the wastewater treatment pond. (Reserves) - To equip a lab with equipment for performing effluent monitoring. - To purchase a centrifuge or another equipment for pressing the sludge from effluent treatment system. <p>Cacoal – RO</p> <ul style="list-style-type: none"> - To purchase aeration equipment for the wastewater treatment pond. (Reserves) - Pumps for dosing chemicals - To equip a lab with equipment for performing effluent monitoring. - To purchase a centrifuge or another equipment for pressing the sludge from effluent treatment system. <p>Conceição do Araguaia - PA</p> <ul style="list-style-type: none"> - Construction of a holding pond for raw process water. - To purchase aeration equipment for the wastewater treatment pond and equalizer. - To purchase a centrifuge or another equipment for pressing the sludge from effluent treatment system. - To equip a lab with equipment for performing effluent monitoring. <p>Naviraí - MS</p> <ul style="list-style-type: none"> - To equip a lab with equipment for performing effluent monitoring. - To purchase a centrifuge or another equipment for pressing the sludge from effluent treatment system. <p>Lins – SP</p> <ul style="list-style-type: none"> - Construction of tanks for new Caleiro recycling. - Construction of tanks for chromium bath recycling. - Construction of grease trap. - Construction of new pipelines to ETE. - Purchase of a centrifuge or another equipment for pressing the sludge from effluent treatment system. - To equip a lab with equipment for performing effluent monitoring. <p>São Luis dos Montes Belos - GO</p> <ul style="list-style-type: none"> - Construction of Primary Decanter. - Construction of Physical-Chemical Process. - Construction of Secondary Decanter - To equip a lab with equipment for performing effluent monitoring

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Marabá – PA

- Construction of a new effluent treatment station, physical-chemical equalizer, primary decanter, aerated ponds, secondary decanter.
- Purchase of aeration equipment.
- To equip a lab with equipment for performing effluent monitoring.
- Purchase of a centrifuge or another equipment for pressing the sludge from effluent treatment system
- Pumps for dosing physical-chemicals.

Estância Velha – RS

- Construction of a new effluent treatment station, physical-chemical equalizer, primary decanter, aerated pond.
- Purchase of aeration equipment.
- To equip a lab with equipment for performing effluent monitoring.

Rio Brilhante – MS

- Construction of a new effluent treatment station, physical-chemical equalizer, primary decanter, aerated ponds, secondary decanter.
- Purchase of aeration equipment.
- To equip a lab with equipment for performing effluent monitoring.
- Purchase of a centrifuge or another equipment for pressing the sludge from effluent treatment system
- Pumps for dosing physical-chemicals.

Redenção – PA

- Construction of a new effluent treatment station, physical-chemical equalizer, primary decanter, aerated ponds, secondary decanter.
- Purchase of aeration equipment.
- To equip a lab with equipment for performing effluent monitoring.
- Purchase of a centrifuge or another equipment for pressing the sludge from effluent treatment system
- Pumps for dosing physical-chemicals.

G O A L S	<p style="text-align: center;">Investments foreseen for the units: Slaughterhouses</p> <p>Lins – SP</p> <ul style="list-style-type: none"> - Construction of a PVC pipeline for transportation of methane to the tanning unit for utilization in boiler. - Purchase of gas burner for the boiler. - Physical-chemical process after bio-digesters. <p>Ituiutaba - MG</p> <ul style="list-style-type: none"> - Construction of anaerobic bio-digesters. - Purchase of gas burner for the boiler. - Physical-chemical treatment process after bio-digesters. <p style="text-align: center;">-</p> <p>Campo Grande - MS</p> <ul style="list-style-type: none"> -Construction of complete liquid effluent treatment station, containing: static riddles, grease Box, equalization tank, pump house, pipeline network. - Construction of anaerobic bio-digesters. - Purchase of gas burner for the boiler. - Physical-chemical process after bio-digesters. <p>Naviraí - MS</p> <ul style="list-style-type: none"> - Construction of anaerobic bio-digesters. - Purchase of gas burner for the boiler. - Physical-chemical process after bio-digesters. <p>Mozarlândia - GO</p> <ul style="list-style-type: none"> - Construction of anaerobic bio-digesters. - Purchase of gas burner for the boiler. - Physical-chemical process after bio-digesters. <p>Marabá – Pa</p> <ul style="list-style-type: none"> - Construction of ETE – effluent treatment station, complete, containing: static riddles, grease box, equalization tank, pump house, pipeline network. - Construction of anaerobic bio-digesters. - Purchase of gas burner for the boiler. - Physical-chemical process after bio-digesters. .
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Table 2. Summary of Bertin Ltda. ESHS Review by Operating Unit

ESMS	Production	Principal E&S Compliance Issues	PS Compliance Issues	Relevant CAP Items	Basis for Evaluation
<p>Bertin Ltda. Corporate Environmental and Social Management System</p> <p>To be implemented after commitment; Bertin is currently requesting proposals</p> <p>-</p>	N/A	<p>Good corporate environmental management capacity; social development specialist to be hired as part of the Corporate Action Plan (CAP).</p> <p>Workplace OHS standards universally compliant with requirements. Security procedures being upgraded.</p> <p>Odor control, air emissions generally satisfactory at all facilities. GHG control through flaring/energy fuel source. Individual plant effluent situation as noted below.</p>	<p>PS 1: Development of formal ESMS. Improved Corporate Social Respon. (CSR); Implement Public Consultation & Disclosure Plan (PCDP).</p> <p>PS 2: Prepare full compliance plan for all operations.</p> <p>PS 3: Implement PPAP for all operations.</p>	<p>Implementation of Corporate Action Plan (CAP) encompassing ESMS; CSR Plan; PPAP; PCDP; Sacre 2 IPDP; Labor & Working Conditions Policy; Maraba Slaughterhouse ESAP.</p> <p>For each industry unit: Develop CAPs for waste/water use/energy use minimization.</p> <p>Upgrade effluent analysis laboratory.</p>	<p><u>Corporate:</u> Extensive direct negotiations between IFC and Bertin.</p> <p><u>Individual Plants:</u> As noted below. Decision as to field visit or desk review based on probable level of EHS risk involved.</p>
Individual Production Units / Location	Individual Units	Individual Units Effluent Quality	Individual Units	Individual Unit PPAP	Individual Unit Due Diligence Basis
<u>Slaughterhouses</u>	<u>(head/day)</u>				
Lins, SP	1200	High BOD,COD, TSS,O/Gr	PS 3	Upgrade WWTP	Field visit
Ituiutaba, MG	1200	High TSS	PS 3	Upgrade WWTP	Desk review
Navirai, MS	1600	High BOD, TSS, O/Gr	PS 3	Upgrade WWTP	Field visit
Mozarlandia, GO	2000	High BOD,COD, TSS,O/Gr	PS 3	Upgrade WWTP	Desk review
Itapetinga, BA	320	Not compliant – WWTP upgrade required	PS3 PS6 - supply chain vs natural habitats	Not yet developed Need to revise cattle purchasing procedures	Field visit

Maraba, PA	1500	Partially compliant – WWT upgrade required	PS3 PS 2, 5, 6, 7 apply to Bertin's suppliers	Upgrade of wastewater treatment plant. Cattle Purchasing Procedure	ESIA/Field visits
<i>Agua Boa, MT</i>	<i>500 (not operating)</i>	<i>Recently acquired. Under refurbishment</i>	<i>Likely to have similar issues as Marabá</i>	<i>Will be defined</i>	<i>Studies will be done</i>
<i>Campo Grande, MS</i>	<i>3000</i>	<i>Under construction</i>			<i>Desk review</i>
Tanneries	(hides/day)				
Cacoal, RO	2000	High TSS	PS 3	Upgrade WWTP	Desk review
Redencao, PA	800	High oil and grease, TSS, total coliforms.	PS 3: Effluent Quality. Otherwise meets PSs	Upgrade WWTP	Field visit
Conceicao do Araguaia, PA	2000	High oil and grease, TSS, total coliforms.	PS 3: Effluent Quality. Otherwise meets PSs	Upgrade WWTP	Field visit
Sao Luis dos Montes Belos, GO	3000	High BOD, TSS, O/Gr	PS 3	Upgrade WWTP	Desk Review
Rio Brilhante, MS	1100	Slightly High BOD	PS3	New WWTP	Desk Review
Navirai, MS	3000	High BOD, TSS, O/Gr	PS 3	Upgrade WWTP	Field visit
Estancia Velha, RS	5000	No information available	To be determined		Desk review
Lins, SP	3800	High BOD, TSS, O/Gr, COD	PS 3	New WWTP	Field visit
Aguai, SP	7000	Mostly compliant	PS 3	Upgrade WWTP	Field visit
<i>Marabá, PA</i>	<i>Not decided upon at the time of appraisal</i>	<i>New</i>			
Dog Toys	(tons/ye ar)				
Cacoal, RO	1000	None			Desk Review
Conceicao do Araguaia, PA	3200	None			Field visit
Sao Luis dos Montes Belos, GO	2100	None			Desk review
Uberlandia, MG	-	None			Desk review *
Guaicara, SP	3200	None			Desk review
Lins, SP	-	None			Field visit

PPE	(Shoe pairs/yr)				
Lins, SP	630,000	None			Field visit
Castanhai, PA	1,674,000	None			Desk Review
Cleaning Products	(tons/yr)				
Lins, SP	167,000	None			Field visit
Various Facilities	Units				
Can Factory	(cans/day)				
Lins, SP	1 x 10 ⁶	None			Field Visit
Small hydro (Sacre 2) Campo Novo dos Parecis, MT	29 MW	None	PS 7	Indigenous Peoples: IP Dev. Plan prepared	Field visit/Negotiations
<i>Ox - Cosmetics Plant (new), SP</i>	<i>25,000 tons/yr</i>	<i>New</i>			<i>Desk review</i>

ATTACHMENT II - BERTIN: CORPORATE ACTION PLAN
February 14, 2007

TASK	TASK DESCRIPTION	TASK COMPLETION DATE IA CONDITIONS
<p align="center">A.</p>	<p>Design of an Integrated System for Social and Environmental Affairs, Quality, and Occupational Health and Safety Management (ESMS)</p> <p>The system should incorporate the following elements: (i) environmental and social assessment shall include new operations as they are identified for purchase or development; (ii) management program shall include enhancement of cattle purchasing procedures as indicated by the assessment above; (iii) organizational capacity; (iv) training; (v) community engagement; (vi) internal auditing and monitoring; and (vii) reporting. The system will be based upon internationally recognized systems such as ISO 9001 and 14001, and OHSAS 18001. The system should ensure compliance with Brazilian laws and regulations and IFC environmental and social policies and guidelines. The system should also include a monitoring and emergency response program.</p> <p>The system shall be approved by Bertin's Management and implemented across the entire Company.</p> <p>ESMS Implementation</p> <p>a) Bertin shall send to IFC its Company's Environmental and Social Policy, and TOR for the ESMS design. b) Appointment of the consultant responsible for designing the ESMS (for completion within 12 months) c) Submit a plan, in form and substance acceptable to IFC, to staff for the implementation of the ESMS which shall encompass OHS, Social Development and Environment Management.</p>	<p align="center">Signature of the Loan Agreement plus 12 months</p> <p>a) Condition of First Disbursement b) Signature of Loan Agreement plus 3 months c) Signature of Loan Agreement plus 3 months</p>
<p align="center">B.</p>	<p>Bertin's Pollution Prevention and Abatement Plan (PPAP)</p> <p>a) Bertin shall implement a PPAP in form and according to a schedule acceptable to IFC. Such PPAP to be completed by 24 months after the Signature of Loan Agreement. (Annex A)</p>	<p>(a) Condition of First Disbursement</p>
<p align="center">C.</p>	<p>Enhancement of Bertin's Corporate Social Responsibility (CSR) plans and actions</p> <p>Setting up a Management Structure for CSR</p> <p>a) Hire or appoint a Social Development Specialist to coordinate the CSR area.</p>	<p>(a) Condition of First Disbursement:</p>

ATTACHMENT II - BERTIN: CORPORATE ACTION PLAN
February 14, 2007

<p>D.</p>	<p>b) Carry out a diagnostic and evaluation of Bertin's CSR actions, current and past; identify the best structure, including its legal status, to carry out Social Investment actions; elaborate a CSR/Social Investment Plan, including targets (short and long term) and projected administration and expenditures budget. The investment plan shall include training on Good Agricultural Practices (GAP) for suppliers in sites identified during diagnosis.</p> <p>c) Establish the structure outlined in the previous item</p> <p>Carry out CSR/Social Investment Plan, monitor and report</p> <p>d) Implement CSR/Social Investment Plan</p> <p>e) Monitor and evaluate results of the CSR/Social Investment Plan including reporting results achieved. Use the "balanço social" standard developed by the Brazilian Institute of Social and Economic Analysis (IBASE) and the Global Reporting Initiative (GRI).</p> <p>Implementation of Bertin's Public Consultation and Disclosure Plan (PCDP)</p> <p>f) Implement the PCDP according to schedule agreed with IFC (Annex B) and report the implementation thorough the AMR</p>	<p>(b) Signing of Loan Agreement plus 6 months</p> <p>(c) Signing of Loan Agreement plus 8 months</p> <p>(d) Report through the AMR</p> <p>(e) Report through the AMR</p> <p>(a) Reporting through the AMR</p>
<p>E.</p>	<p>Bertin's Indigenous Peoples' Development Plan (IPDP)</p> <p>a) Complete implementation of the IPDP for Sacre 2 according to schedule.</p> <p>b) Enhance the Itapetinga cattle purchasing procedure to include criteria for IP violence and Indian land encroaching</p> <p>c) Apply PS 7 IFC Guideline for interactions with Indigenous People that may arise from any activities carried out by Bertin.</p>	<p>a) By submission of the first AMR</p> <p>b) By submission of the fist AMR</p> <p>c) Reporting through the AMR</p>
<p>F.</p>	<p>Enhancement of Bertin's Labor and Working Conditions Policy</p> <p>a) Full compliance with Brazilian National Law concerning disabled people (Law N° 7.853, of October 24, 1989) Review Bertin's Human Resources policies and staff profile in light of IFC's Guidance Note on Non-Discrimination.</p> <p>b) Equal Opportunities and submit review report to include recommendations to ensure future compliance with the PS2.</p>	<p>a) By submission of first AMR</p> <p>b) By submission of first AMR</p>
<p>G.</p>	<p>Environmental and Social Action Plan (ESAP) for the Marabá Slaughterhouse</p> <p>Bertin agrees to implement the ESAP for the Marabá Slaughterhouse, according to Annex C timetable.</p>	<p>Positive covenant</p>

ATTACHMENT III. IMPROVEMENTS TO BERTIN'S CATTLE PURCHASING PROCEDURE

Objectives

The objectives for improving Bertin's cattle purchasing procedure are two-fold:

- Provide reasonable assurance that Bertin's activities do not encourage deforestation in the Amazon.
- Ensure that the cattle that Bertin buys do not come, either directly or indirectly, from farms involved in slave labor, land titling fraud, agrarian violence or illegal forest clearance.

Rationale

The above objectives will be achieved by the following means:

- Promoting the use of good agricultural practices including:
 - making effective use of the land already cleared in the Marabá area, by such means as pasture improvement, and
 - preparing cattle suppliers for the implementation of animal traceability as soon as the state of Pará is open for export.
- Improving Bertin's capacity to monitor its supplier's environmental and social performance, and acting accordingly, as follows:
 - developing and implementing an inventory of Bertin's suppliers to ensure that each registered supplier maintains compliance with required criteria,
 - purchasing of animals for slaughter according to those environmental and social criteria, and excluding those farmers which do not meet them, and
 - promoting improved land use on the properties of cattle suppliers and keeping track of their efforts to reclaim degraded areas and reforest areas improperly cleared.

Target Group

This procedure is intended for Bertin's Marabá slaughterhouse and its cattle suppliers.

Procedural Tasks

Task 1: Establish criteria for Bertin suppliers

Bertin will, with appropriate stakeholders, review and establish a set of workable criteria for accrediting or registering farms as "Approved Suppliers".

Criteria should include the following:

Minimum criteria:

1. No conviction for slave labor.
2. No conviction for land acquisition fraud (*grilagem*)
3. No conviction for agrarian violence.
4. No conviction for illegal forest clearance
5. No ownership of or ranching of cattle on lands that extend into Indian Areas (*Areas Indígenas*)

Additional criteria:

6. Demonstration of land title regularization.
7. Compliance with current with environmental requirements and no illegal deforestation practice.
8. Farm is implementing the SISBOV tracking system.
9. All cattle sold to Bertin originated on the farm, or can be demonstrated to have been acquired from farms which meet the Bertin criteria.
10. Farm is actively incorporating Good Agricultural Practices.

Timetable: Bertin will establish criteria for its suppliers within one month of Commitment. These criteria will form the basis for Bertin's decisions on the purchasing of cattle. Implementation of the criteria for decision-making is discussed below in Task 7. Bertin plans to implement the minimum criteria as a basis for decision-making within two months of Commitment. Other compliance criteria will be implemented in two stages thereafter.

Task 2: Develop farm inventory form

Develop an appropriate form for suppliers to fill out so that they can apply to be an "Approved Supplier" for Bertin. This will include questions on the farm's location, production system and compliance with the criteria developed in Task 1. The form will be based on the current SISBOV template, which will help suppliers prepare for the start of the obligatory traceability of their cattle, as soon as Pará is given clearance for the export of meat to the EU

Timetable: Within 1½ months of Commitment.

Task 3: Develop farm inventory system

The farm inventory system will be a computer program which will summarize the information collected on the farm inventory forms and provide it in a user-friendly manner for Bertin's purchasing staff. Tasks 2 and 3 are closely related and will be done together.

Timetable: Within 1½ months of Commitment.

Task 4: Orientation of Bertin's buyers and suppliers to purchasing criteria

Bertin will publicize its requirements and provide advice on how the criteria can be met and resources for those frequent suppliers that wish to complete the system early. A variety of measures are possible, including brochures/flyers, training courses, meetings, etc. The objective will be to help Bertin's cattle buyers and suppliers understand why the criteria are being set, and what they need to do to become an "Approved Supplier".

Timetable: Two weeks following completion of tasks 2 and 3.

Task 5: Collect farm data

Bertin will use the form to collect data from all farms which currently supply cattle, and those farms wishing to do so. As soon as Bertin's cattle buyers have received orientation on the purchasing criteria, suppliers will provide the completed inventory forms and supporting documentation at the time a supplier sells cattle to Bertin.

Also Bertin will form a team of professionals to interview suppliers and collect the required data according to a pre-determined schedule. Bertin will collect some information directly, from publicly available databases or other published sources. This task will be an ongoing process, as new suppliers apply to Bertin for accreditation. Supporting documentation for the various criteria could include the following:

Minimum Criteria to be implemented in two months after orientation of Bertin's cattle buyers:

- Criterion 1: No conviction for slave labor. Any involvement indicated by the inclusion of the farm owner in the so-called "Dirty List" for slave labor issued by the Ministry of Labor (<http://www.mte.gov.br/Noticias/conteudo/5773.asp>).
- Criterion 2: No conviction for land acquisition fraud (*grilagem*). Farmers' statement in this regard will be verified with the *Vara Agraria de Marabá*, through checking a list of farmers convicted of crimes of *reintegração, manutenção and interdito proibitório*.
- Criterion 3: No conviction for agrarian violence. Farmers' statement in this regard will be verified with the *Vara Agraria de Marabá*, through checking a list of farmers convicted of crimes related to agrarian conflict.
- Criterion 4: No convictions from IBAMA for environmental infractions including illegal forest clearing.
- Criterion 5: No ownership of or ranching of cattle on lands that extend into Indian Areas (Areas Indigenas). Verification shall be done through FUNAI.

Farmers will be asked to sign a statement at first sale following commitment that states that 1) they have been informed of the IFC policies as they relate to the criteria identified above and 2) that they have (in advance of full cadastre information) informed that their farms are not in violation of any of the priority issues identified above.

Criteria to be implemented within two years:

- Criterion 6: Demonstration of land title regularization. The following documentation will be required (i) within one year, submission of ITR, GPS coordinates for the farm, and for farms over 2,500 ha, a certificate indicating that the *matricula fundiaria* has not been suspended as per Decree 3672 of 23 June, 2006, (ii) also within one year submit CCIR or a protocol indicating that CCIR is being processed by INCRA; (iii) within two years, have the GPS coordinates certified by INCRA (Land Agency), and the CCIR; and (iv) for all properties, once the State issues the new procedures for land regularization, being developed with the support of Pará Rural, that they adjust to them within a reasonable period of time, to be determined.
- Criterion 7: Compliance with current with environmental requirements and no illegal deforestation practice: (i) within one year, property owners will submit the environmental license issued by the Pará State Secretariat for the Environment (SECTAN); should the property not have such license, the owner will have one year to present an official protocol indicating the start of the process to acquire the license; (ii) within a period of two years, the farm owner will present the final environmental license issued by SECTAM. A satellite system managed by Bertin will monitor the occurrence of illegal deforestation of the preceding year.

Criteria to be gradually implemented after Pará opens for export to the EU

- Criterion 8: Farm is implementing the SISBOV tracking system for all rancher suppliers. Documentation could include appropriate SISBOV documents.
- Criterion 9: All cattle sold to Bertin originated on the farm (were raised from birth), or can be demonstrated to have been born on and acquired from farms which meet the Bertin criteria.
- Criterion 10: Farm is actively incorporating Good Agricultural Practices. Documentation could include a farm management plan, or the farm could be certified under an appropriate scheme such as EurepGAP.

Timetable: Start 2 months after Commitment, all existing suppliers surveyed and data collected by 6 months after Commitment, data collection continues on an ongoing basis.

Task 6: Data entry

Bertin will enter the data into the computer system, test the system for reliability, and bring it on line. Data entry will be a continuing process as new potential suppliers apply for accreditation.

Timetable: Start as data available from task 5, data entry continues on an ongoing basis.

Task 7: Registration of farms

When full documentation for a farm is available, it will be reviewed and the farm will be registered as an “Approved Supplier” –this could be a qualified registration if there are pending items. If it does not meet the criteria, Bertin will advise the farm as to what measures need to be taken to improve its performance and a timeframe for it to happen. In some cases assistance may be provided as appropriate. Bertin’s purchasing staff will always consult the farm inventory system when making purchases of cattle, and will not purchase from farms that are not registered or that do not fulfill their pending items in due time.

The identified criteria are expected to be implemented in a staged fashion. Implementation of the minimum criteria will take place within two months after orientation of Bertin’s buyers. The balance of the criteria will be implemented as data becomes available, but not later than 6 months after implementation of the minimum criteria.

Farmers that are deemed non-compliant with the minimum criteria, may eventually become compliant and be eligible for inclusion, for instance, if they can demonstrate that they have come into legal compliance. The registration of farms with an irregular situation in terms of property titling or environmental compliance will require, within six months of their initial registration, the following: (i) evidence that the proprietor has initiated or been granted a license to operate by the Pará State Environmental Secretariat (SECTAM); and, (ii) within one year of completion of the licensing procedure, evidence that the proprietor has initiated action to regularize its land titling situation or has been granted the corresponding title.

Timetable: Registration of farms will begin as data becomes available in the system. Registration of existing suppliers should be complete by end of the sixth month after Commitment, coincident with completion of data collection from these suppliers as per task 5. Registration of new suppliers will continue on an ongoing basis. Bertin purchasing staff will have fully adopted the use of the system to make decisions on purchasing at the end of month 6 after Commitment.

Task 8: Performance monitoring

Bertin will establish a unit to carry out environmental and social monitoring of registered farms, to ensure that they are meeting the established criteria on a continuing basis. This will include regular cross-checking of appropriate legal and other databases, as well as monitoring of land clearing through satellite imagery.

Critical Criteria	Mechanisms for continual monitoring	Timeframe
Criteria 1 – Forced Labor	Verification of producers' names in the "Dirty List" for Slave Labor, issued every six months by the Ministry of Labor	Monthly
Criteria 2 – Fraudulent landholding	Verification at the Local Agrarian Judiciary Unit of Marabá	Monthly
Criteria 3 – Agrarian Violence	Verification at the Local Agrarian Judiciary Unit of Marabá	Monthly
Criteria 4 – Illegal deforestation, as from January 2006	Verification of producers' name in the list of people who have pending fines at the local IBAMA unit (Environmental Agency)	Monthly
Criteria 5 – Invasion of Indigenous Reserves	Verification at FUNAI (Indigenous Agency) in Marabá	Monthly

In order to be able to indicate progress in achieving improvements in land use practices, Bertin will measure and report on the following indicators of environmental performance:

- % of degraded APP (Permanent Preservation Areas) in relation to the total APP.
- % of the properties with registered (*abervada*) legal reserve with the corresponding authorities.
- % of registered legal reserve vis-à-vis the legal requirement.
- Area (ha) under reclamation vis-à-vis the reclamation plans.
- % of owners and/or property managers that received training by Bertin in the previous year
- % of properties that undertake erosion control.

If the producer breaches his commitment to the Bertin principles for cattle purchasing, he will lose his accreditation for supplying to Bertin. Once he has taken corrective action to fulfill the criteria, he may again be accredited and seek his registration.

Additional Criteria	Mechanisms for continual monitoring	Timeframe
Criteria 6 – Legality in landholding	Documentation: ITR (land tax), GPS coordinates for the farm, certificate indicating that the <i>matricula fundiaria</i> has not been suspended, and a protocol to show that the CCIR process is underway.	One year
	Within two years, have the GPS coordinates certified by INCRA (Land Agency), and the final CCIR	Two years
Criteria 7 – Compliance with environmental requirements	a) Independent verification via satellite images, based on GPS coordinates submitted by the producers and further confirmation with environmental authorities.	Annual
	b) Submission of the protocol for environmental licensing, issued by SECTAM	After 1 year
	c) Submission of the environmental license issued by SECTAM	After 2 years
	d) Indicators of fulfillment of the conditions laid out on the environmental license.	According to the timeframe established in the license.

Bertin will also produce an annual consolidation report containing an analysis of the environmental performance of the supplier farms.

Critical Criteria	Mechanisms for continual monitoring	Timeframe
Criterion 8: SISBOV Implementation	Farm is implementing the SISBOV for all rancher suppliers.	EU Export
Criterion 9 – Cattle provenence	All cattle sold to Bertin can be demonstrated to have been born on and acquired from farms which meet the Bertin criteria.	EU Export
Criterion 10 – GAP	Farm is actively incorporating Good Agricultural Practices.	EU Export

Responsible Party

The Bertin Group through its Corporate Environmental Manager is directly responsible for the coordination of the environmental monitoring program. The program coordinator will require the necessary information from the cattle suppliers for the CCSA and the suppliers' database.

Timetable

Implementation of the tasks to establish and support the cattle purchasing procedure will commence immediately after the signing of the Loan Agreement and will be a permanent activity as shown in the attached timetable.

The evaluation and monitoring of environmental performance depends on the regular updating of the farm inventory and therefore should start within a year of commencing the satellite image database. This will be used by Bertin for purchasing purposes until the necessary mechanisms for the implementation of the Law No. 10.267/01 are up and running, by which time, the state authorities are expected to take the satellite monitoring role.

ATTACHMENT IV. CATTLE PRODUCTION OF GREENHOUSE GASES BERTIN LTDA. ADDENDUM TO THE DISCLOSURE PACKAGE

Introduction

During the disclosure period IFC received several comments related to Greenhouse Gas emissions by Bertin's cattle suppliers. This paper presents a response to the comments received on this subject including the actions committed by Bertin and IFC to help address this issue.

Inputs received in relation to green house gas emissions included those from: FBOMS, particularly Amigos da Terra, Greenpeace Brasil and IMAFLORA, and the Sierra Club, which was the most explicit about Bertin's estimated emissions.

Greenhouse Emissions by Cattle – a Global Perspective

Because of their special digestive systems, ruminant animals such as cattle, sheep, buffalo and goats can convert otherwise unusable plant materials into nutritious food and fiber. This same helpful digestive system, however, produces methane, a potent greenhouse gas that can contribute to global climate change. Livestock production systems can also emit other greenhouse gases such as nitrous oxide and carbon dioxide.

Globally, ruminant livestock produce about 80 million metric tons of methane annually, accounting for about 28% of global methane emissions from human-related activities¹. An adult cow may be a very small source by itself, emitting only 60-110 kg of methane, but with about 180 million cattle in Brazil, and over one billion large ruminants in the world, ruminants are one of the largest methane sources. In Brazil, cattle emit about 11 million metric tons of methane per year into the atmosphere, accounting for 4% of global human-related methane emissions.

Methane Production

<i>Main producers of cattle</i>	<i>Heads</i>	<i>Methane production* (kg/head/yr)</i>	<i>Methane production (kg/head/yr)</i>	<i>% of world-wide methane emissions</i>
World-wide	1,031,700,000	59	60,870,300	28%
India	325,000,000	59	19,175,000	8%
Brazil	177,000,000	59	10,443,000	4%
China	135,000,000	59	7,965,000	3%
US	95,000,000	59	5,605,000	2%
Others	405,310,714	59	23,913,332	11%

* Intergovernmental Panel on Climate Change (IPCC) average for Brazil²

¹ After US EPA - <http://www.epa.gov/methane/sources.html>

² IPCC Guidelines for National Greenhouse Gas Inventories (www.ipcc-nggip.iges.or.jp)

The World Bank and Climate Change

Climate change has emerged as a key concern for the World Bank and its clients in the 21st century. Sea level rise, warming temperatures, uncertain effects on forests and agricultural systems, and increased variability and volatility in weather patterns are expected to have a significant and disproportionate impact in the developing world, where the world's poor remain most susceptible to the potential damages and uncertainties in a changing climate.

The Bank is increasingly incorporating these considerations into its development operations, advising clients on options, helping promote sectoral efficiency and clean energy alternatives, and assisting its clients in adapting to foreseeable impacts while seeking globally equitable responses to the challenge. These actions are described in the Environmental Strategy for the World Bank: Climate Change³.

Contribution to Greenhouse Gas Emissions by Bertin's Cattle Suppliers

Bertin does not grow or fatten cattle for processing at its facilities, and the effect of Bertin's slaughterhouses in promoting the increase in the number of cattle is very small. The company's current slaughtering capacity of 2.1 million heads per year amounts to a fraction of the existing 180 million-head herd in Brazil, and so is the emission from its suppliers' cattle.

As the ideal age for the cattle for slaughtering is three years or less⁴. A herd then needs at least 3 years to develop animals ready for slaughter⁵. Between now, when Bertin slaughters 7,000 heads/day, and in three years time, when the expansion operates at full capacity of 10,000 heads/day, Bertin will be drawing from the existing herd.

There is therefore a window of opportunity before the expansion is fully operational, to help improve management practices in order to improve livestock operation's efficiency and reduce greenhouse gas emissions, as explained below.

The source of direct greenhouse emissions from Bertin's operations are mainly due to the wastewater treatment facilities, particularly those installed in slaughterhouses, where the effluents contain high concentrations of organic matter. To address this, Bertin is installing a biodigester in each of its slaughterhouse wastewater treatment facilities, as shown below.

³ World Bank Group's climate change website: www.worldbank.org/climatechange

⁴ The ideal time for slaughtering a bovine depends on economic viability. The best is when the weight of the carcass reaches 16 "arobas" (225 Kg). It is better economically to kill the animal early, but not prematurely as the meat flavor would be bland. In Brazil an appropriate age for slaughter is between 24 and 30 months (Ref: Sci-Elo Brasil - <http://www.scielo.br/>).

⁵ The gestation period for the bovine race is between 275 and 305 days.

Bertin Contribution to Reducing Greenhouse Gas Emissions

There are several management practices that help improve livestock operation efficiency and reduce greenhouse gas emissions, as follows⁶:

- Improving grazing management
- Soil testing, followed by the addition of proper amendments and fertilizers
- Supplementing cattle diets with needed nutrients
- Developing a preventive herd health program
- Providing appropriate water sources and protecting water quality
- Improving genetics and reproductive efficiency

The particular practices a livestock producer utilizes to improve production will depend on the circumstances of his or her operation, including the goals to be achieved and the natural, financial, and labor resources available. According to EMA⁷, the effect of these practices on GHG emission reductions can be very significant (25% and up).

To further reduce methane emission by cattle it is important to increase animal production per unit area and to reduce the slaughtering age to get a lower ratio of kg methane/kg animal protein (meat). Grazing is the most common method for animal feed used in South America, including Brazil. As grass cellulose is the main source of methane emission, management practices that contribute to an increase in forage yield per unit area and maintain stocking rate without weight losses, all year long, are needed. Profitability, competitiveness and sustainability of the production system will be thus increased whilst reducing the negative impact on the environment⁸.

Bertin's Corporate Action Plan (CAP) includes provisions for training cattle suppliers on good agricultural practices, which are intended to improve the health of the animals, improve the quality of the meat and, also, to reduce methane emissions⁹. Among the above management practices, pasture improvement has the added advantage of allowing the intensification of cattle ranching thereby reducing the need for additional land and reducing the risk of deforestation. Together with a global system of carbon trading, halting deforestation was singled out in the Stern Report¹⁰ as the most effective way to manage climate change.

Bertin's other contributions for halting deforestation involves the immediate suspension of purchases from farmers convicted by Brazilian authorities for environmental infractions including illegal forest clearing. Also Bertin has committed to use a system of satellite imagery to monitor occurrences of illegal deforestation and restrict its purchases to suppliers that abide by the law.

⁶ US EPA Global Warming webpage (<http://www.epa.gov/rlep/faq.html#3>)

⁷ Emissions Marketing Association (www.emissions.org). See attachment.

⁸ Ana and Odo Primavesi. Optimizing Climate-Soil-Pasture Interaction in Brasil. 2002

⁹ Arcadis Tetraplan. Environmental and Social Impact Assessment for Bertin's Slaughterhouse in Marabá and its Supply Chain. Chapter 5 – Good Agricultural Practices. Pasture Management. Chapter 9 - Environmental and Social Action Plan (ESAP).

¹⁰ Sir Nicholas Stern. Review on the Economics of Climate Change. October 20, 2006.
www.hm-treasury.gov.uk

Bertin is implementing an investment plan to improve wastewater treatment throughout its operations, which includes the installation of biodigestors as the secondary treatment of choice for its slaughterhouses. Biodigestors receive wastewater with extremely high organic content and, through anaerobic digestion, reduce and stabilize the waste and produce methane gas, which is confined for reuse as an energy source.

In its Lins Unit, Bertin is constructing a factory to make use of slaughterhouse waste (mostly fat) for the production of organic biodiesel, to be compliant with all GoB fuel quality specifications for use in the company's own tractor fleet. The above initiatives by Bertin are fully compliant with the WBG's environmental strategy on climate change.

Bertin is also working with IFC on a technical assistance program in the direct area of influence of Bertin, with the following objectives: i) provide income generating alternatives to small farmers who would not be able to comply with Bertin's new requirements; and ii) provide technical assistance to Bertin's suppliers in good agricultural practices, including pasture management, protection and development of legal reserves.

Methane emissions – reductions from ruminants

Companies preparing to participate in the trading of greenhouse gas emissions should not overlook the potential to reduce methane emissions from livestock, say **Gerald Turnbull** and **Bernard Du Charme**

Of the various greenhouse gases (GHGs) contributing to global warming, methane is a real option for organisations planning to include emissions trading in their GHG reduction strategies because of readily available mitigation and measurement techniques.

Methane levels in the atmosphere have doubled over the last 200 years (IPCC, 2000; Johnson *et al.*, 1996). In addition to a direct radiative effect, methane participation in chemical reactions in the atmosphere indirectly contributes to global warming by influencing the amount of ozone in the troposphere and stratosphere, the amount of hydroxyl in the troposphere and the amount of water vapour in the stratosphere.

Methane has a relatively short life in the atmosphere (10–12 years) compared to other GHGs (120 years for carbon dioxide) and methane reduction strategies offer an effective means of slowing global warming in the near term, as suggested by James Hansen in *Global Warming in the 21st Century: An Alternative Scenario*. Studies suggest that a decreased entry rate of only 10% will stabilise methane concentrations at present levels (Lelieveld *et al.*, 1993).

Livestock programmes are probably not top of the list for industry managers and executives seeking strategies to reduce GHGs. However, livestock can offer real solutions for mitigating the GHG emissions risks that concern industry leaders. Global emissions of methane from digestion of ruminant animals (cattle, sheep, buffalo, goats and camels) are estimated to be 80 million tonnes per year (US EPA, 1998; Gibbs and Johnson, 1994), mak-

ing ruminants the largest single source of anthropogenic methane emissions (IPCC, 2000a). These emissions can be reduced easily in inefficient herds in developing countries and these reductions can be quantified with real-time measurements and verification.

The process of anaerobic microbial digestion in the gut of ruminants allows the production of meat, milk and draft power from fibrous plant resources and results in exhaled methane of approximately 6% of the animal diet energy. Thus, mitigation or alleviation of methane 'emitted' from livestock is most effectively approached by strategies that reduce feed input per unit of product output. Nutritional, genetic and management strategies to improve feed efficiency increase the rate of product (milk, meat) output per animal. In other words, the milk or meat obtained from each animal per day can be increased while the methane produced and feed used decreases.

Increased efficiency in feed utilisation also encourages the adoption of technology because it is economically advantageous. Techniques that can be targeted at livestock systems internationally include feed processing, strategic supplementation, natural production-enhancing agents and methods to improve genetics and reproduction. All of these technologies are currently available in natural forms, have low to medium capital requirements and are estimated to reduce ruminant livestock methane per unit of product by 25% to 75%. At constant production rates, total livestock and manure emissions could decrease by between 23 million tonnes/year and 70 million tonnes/year. So it may be possible to stabilise atmospheric methane simply by mitigating emissions from this source alone.

Since inefficient ruminants are primarily located in developing countries, GHG mitigation projects using ruminants require long-term strategic planning that accommodates gradual economic and environmental returns. In Africa, Asia and Latin America, where these projects are being pursued, agriculture remains critically important in terms of employment and income generation. Increased productivity in subsistence and smallholder agriculture is a powerful mechanism for economic growth, income improvement and better access to food.



Moreover, because agriculture dominates the arable landscape, attention to environmental issues in the development of sustainable production systems (reducing pressure on fragile environments) is an indispensable component of any successful future strategy (McCalla, 1998).

In conclusion, 'out-of-the-box' strategies, such as improving livestock efficiency, offer real and quantifiable GHG reductions to industry leaders and policy-makers creating emissions trading markets, but these strategies require planning for long-term economic and environmental returns.

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The Emissions Marketing Association consists of more than 270 members from 190 companies worldwide. Its aim is to promote market-based trading solutions for environmental control



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ATTACHMENT V. THE COMPLEX LAND TENURE SITUATION IN PARA

All land in principal belongs to the State until a decision is made for it to be transferred to private actors. The ESIA for Bertin's Marabá operation indicates the complexity of land tenure in the state of Pará. Land conflicts in Para are numerous, often violent, and date back to the times of Portuguese colonization.

Land tenure legislation is often complicated, allowing for loop holes in interpretation. Invasion and clearing of public lands as well as encroachment of Indian and nature reserves often goes unpunished. Systematic land use planning has been difficult, with competing and often uncoordinated efforts between government agencies at different state and federal levels.

Government capacity is limited in both financial and human resource capacity. Confronted with governmental limitations, individuals have engaged in a range of strategies (ranging from the unconventional to the illegal) to occupy and establish claims to land. Para contains many landless poor, often attempting to farm with little or no technical assistance or farm management experience. Since the mid 1960s when the national government focused on "bringing people without land to a land without people" the region has been a receptacle for the rural poor from areas where agrarian reform had not been carried out. Many sell their plots after several years and move to other areas hoping to get other plots. Land speculation is often wide spread, creating a motive for people to clear land simply to lay claim rather than for any subsequent productive use. Many of the legitimate land occupants are poor farmers, harvesters of forest products, and quilombos (descendants of escaped slaves) are illiterate and easy victims to grileiros (land grabbers).

The government of Para has made land title regularization a priority over the next 2 years, with ITERPA (State Land Agency) working to register land in a unified Federal and State Land Cadaster (Cadastro Unico). Although implementation is likely to be expensive, an \$11 million land administration component in the Pará Rural Development Project is designated for improving land administration in the state of Para. Institutions such as the National Agrarian Reform and Colonization Institute (INCRA) are now also giving special attention to surveying along important inter-state arteries (such as the BR 163). Nevertheless, at present, there is no standard procedure that will allow Bertin to determine if a rancher has a fully regular title and requests for verification are often delayed for over a year.

Under the IFC loan, Bertin would implement a step-wise cattle purchasing procedure (CPP) unique to the region (see Cattle Purchasing Plan for full details). The key criteria related to land tenure in the Bertin Cattle Purchasing Procedure are:

- No conviction for land acquisition fraud (*grilagem*). Farmers' statement in this regard will be verified with the *Vara Agraria de Marabá*, through checking a list of farmers convicted of crimes of *reintegração*, *manutenção* and *interdito proibitório*.

- Demonstration of ownership or possession of the land by clear and legal documentation. The following documentation will be required (i) submission of ITR, CCIR, GPS coordinates for the farm and a certificate indicating documentation has not been suspended by the 2006 decree for farms over 2.500 hectares, (ii) within two years, have the GPS coordinates certified by INCRA (Land Agency) and (iii) for all properties, once the State issues the new procedures for land regularization, being developed with the support of Pará Rural, that they adjust to them within a reasonable period of time, to be determined.

Bertin and IFC followed a consultative to develop criteria with regard to land titling. Initially Bertin would not buy cattle from any farmer who has been convicted of land invasion (claim jumping) crimes. Bertin requires presentation of the ITR (proof of payment of land tax).

During the consultation process, Bertin was informed that some ITRs were counterfeit and being used to stake false land claims and therefore additional evidence should be required of ranchers. The government land agencies are now issuing a certificate (the CCIR) for registration of farms regularized and moving toward the *Cadastro Único*. As the CCIR may also be falsified, Bertin is aware that it must continue to identify additional means to verify ownership. Additionally, the Para-based environmental NGO, IMAZON, advised that the *Corregedoria of Pará* (a legal entity investigating land crimes) had issued a decree in November 2006, nullifying all claims to land by landholders over 2,500 hectares, as these need to be approved by the Senate to be authorized. The Bertin Cattle Purchasing Procedure will now require that producers present a certificate (*certidão*) that they have not had their documents nullified by this decree. This requirement has also been incorporated in the Bertin CPP.

In addition, INCRA, as part of the efforts to regularize land is starting to “certify” GPS coordinates for farms, as part of legal requirements. Additionally, some banks are starting to require certified GPS coordinates for project finance. Bertin will also incorporate in the Cattle Purchasing Procedure the requirement for GPS coordinates. A two-year period will be allowed to provide time for such certification to be processed by INCRA.

In sum, Bertin will incorporate a full range of existing documentation as the current best possible evidence to ensure basic legal landholding while hopefully avoiding cases of gross land improprieties from cattle suppliers. Although these conditions may not assure complete legal landholding, they represent the best alternatives currently available in a very complicated land tenure situation.

More significantly, Bertin’s purchasing conditions seek to eliminate from the supply chain those who are connected to major land fraud and violence while requiring documents that serve as indicators that the ranchers are seeking to regularize their status. It should be remembered that ranchers wishing to obtain full legal title are also frustrated by the complicated, slow, and inefficient land titling process, often settling for only going through the minimum steps they need to secure some rights to the land.

This process also helps ensure that as government efforts to regularize land titles progress, with the help of Pará Rural project, Bertin suppliers will take the lead in becoming fully registered.