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Case Report

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The Case of Aracruz Celulose in Brazil

Submitted by

FASE (Brazil), REBRIP (Brazil), Terra e Direitos (Brazil) and MST (Brazil)

The Case of Aracruz Celulose in Brazil:
Export Credit Agencies exporting unsustainability

Presented by: FASE (Brazil), REBRIP (Brazil), Terra e Direitos (Brazil) and MST (Brazil)

> ***"By helping the country to develop economically, we help to fight poverty, promote social development and protect the environment. These are the pillars of sustainable development, which guide the actions of Aracruz and of the entire forest sector in Brazil and in the world."***

Erling Sven Lorentzen, President of the Administrative Council of Aracruz Celulose, in a speech given during the opening ceremonies of Factory C, August 2, 2002

> ***"They took everything! They took and took and took. Everything."***

Leovegildo – Tupinikim Indian expelled from his land and from *Macacos* Village, destroyed in order to make way for the construction of Aracruz's three factories.

> ***"If one day the blacks of northern Espírito Santo have no water, land, or food, Aracruz Celulose will have had something to do with it!"***

Domingos Chapoca, black leader from the *quilombo* communities of Conceição da Barra and São Mateus.

INTRODUCTION

Made possible through a partnership between the FASE office in Espírito Santo, Brazil, and the Finnish campaign to reform its Export Credit Agency, this study has two main objectives. One is to reach NGOs, universities, institutions and individuals in Finland, in order to give greater visibility to the profound impact of Finnish export credits on establishing industries in the southern hemisphere. Another goal is to reach Brazilian society, especially the people and groups that most directly experience the effects of Aracruz Celulose's expansion project and the construction of its third factory in the state of Espírito Santo, Brazil. The case of Aracruz Celulose is of tremendous symbolic importance in evaluating the asymmetry in North-South relations.

The Finnish Export Credit Agency provided the security for the sale and exportation of machinery by the Norwegian company Kvaerner ASA for Aracruz Celulose's Factory C, in the amount of approximately US$ 100 million (Tove Selin, 2002a). This study seeks to make an effective contribution to the Finnish campaign's struggle to change the criteria used by the government agency, so that, in the future, "credit" will only be given to projects that not only do not harm but actually offer benefits to local communities, and which seek to preserve natural resources. Thus, if this study seeks to demonstrate to Finnish readers the consequences of the policies of their country's Export Credit Agency on local populations and natural resources in Brazil, at the

same time it hopes to be of use to Brazilians who would like to better understand the impacts caused by large-scale eucalyptus plantations and cellulose production.

Located in the municipality of Aracruz in the southeastern Brazilian state of Espírito Santo, Aracruz Cellulose'ss Factory C will increase the company's yearly cellulose production from 1.24 to 1.94 million tons, thus strengthening the company's position as the world's largest producer of this type of wood pulp (Aracruz Cellulose, 2002c). The company's monoculture plantations are concentrated along the central-northern part of the Espírito Santo coast, encroaching more and more westward into the interior of the state and northward into southernmost part of the neighboring state of Bahia. It is clear that in order for the company to meet its new production goals, it needs a larger supply of its raw material, short-fiber eucalyptus. Because of this, the present study cannot and will not restrict itself to the impacts on the industrial area, but will necessarily need to include in its evaluation the consequences of Aracruz's expansion into regions where the company plans to annex additional territory onto its already vast landholdings.

Inaugurated on August 2, 2002, Factory C provides a sobering warning of an impending intensification of the complex's impacts on society and the environment in the region. Always with close ties to the State and without learning from its own past experience, with Factory C the company is repeating the "errors" of its first two factories (1978,1991), re-igniting old, unresolved conflicts, in addition to creating new kinds of impacts. Three stages of the implementation process of this third factory will be critically analyzed here: 1) the project's licensing process and its environmental monitoring by the State; 2) the concepts and ideas that guide the choice of the technologies adopted; and 3) the excessive water consumption by the three cellulose mega-factories of the industrial plant.

This text does not intend to perform the function of an environmental impact assessment (EIA/RIMA) as legally defined for industrial projects of this sort in Brazil. This type of report, normally written by a team of specialists from different areas, often fails to take into account the knowledge and experience of the communities in the affected area. The analyses included in such reports also often do not reach the local populations, organizations, and representative movements. The voices, opinions, suspicions, hypotheses and expectations of the region's traditional inhabitants, who in their everyday lives directly experience the project's impact, are too often ignored in most studies. But these are precisely the voices to which this text seeks to listen.

Beginning with a description of the project proposal for Factory C, based mainly on the data from the EIA/RIMA and from the company itself, the paper will then proceed to an analysis of some environmental aspects related to the industrial complex and to the expansion of eucalyptus monoculture. This is followed by a section reflecting over the socio-economic consequences of the expansion project. Finally, the paper will offer some considerations for defining minimal criteria for the environmental, social, and economic sustainability of projects of this sort in the region.

1. ARACRUZ'S EXPANSION PROJECT

1.1 FACTORY C

The final decision to build another cellulose factory, under the project name of "Fiberline C", came during a meeting by the company's Administrative Council on June 5, 2000, in the presence of the Council's President, Erling Sven Lorentzen, a Norwegian national (Aracruz Celulose, 2002c).

According to the EIA/RIMA[1] for "FIBERLINE C", which was performed by a company called CEPEMAR in December, 1999, Aracruz planned to add to its two existing production units, Factories A and B (which opened, respectively, in 1978 and 1991) by adding another unit. Called Factory C, this third unit increases the Company's production lines with a fifth one. With the new factory, the current production of bleached cellulose was projected to rise from 1.24 to 1.94 million tons – an increase of 700 thousand tons. According

[1] The implementation of a cellulose factory in Brazil is regulated by a series of Federal, state, and municipal laws. The most important of these is the Federal Constitution, which, in Article 225, par. 1, items IV and V, requires that an Environmental Impact Assessment (EIA) be performed, and that an Environmental Impact Report (RIMA) be written detailing any pollution that will be generated and the pollution controls that will be applied to activities that are hazardous to life, quality of life, and the environment. Resolution no. 01/86 of the National Council on the Environment (CONAMA) established the rules, responsibilities, and criteria for making the Environmental Impact Assessment.

to the report, elemental chlorine will not be used in the process. Only "ECF" cellulose (see section 3) will be produced. (CEPEMAR, 1999).

The raw material for the new factory will be eucalyptus wood from Grandis, Urophyla and Urograndis clones and hybrids. Considering that in 1999 Aracruz Celulose's average wood consumption was 3.8 m^3 per ton of cellulose produced, it is estimated that Factory C will consume nearly 2,660,000 m^3 of wood per year. According to the EIA/RIMA, the company's water consumption would increase from 1.54 to 2.224 m^3 per second. In order to ensure the availability of the water supply, in 1999 the canal "Cabloco Bernardo" was built, which channels water from the Doce River basin to the company's reservoir. (CEPEMAR, 1999).

97% of the cellulose produced by Aracruz is exported, to be used in the production of sanitary papers (51%) and specialty papers (20%), destined for markets in Europe (37%) and North America (37%) (Aracruz Celulose, 2002c).

According to Aracruz itself, the expansion project, which includes the construction of Factory C and an increase of more than 72 thousand hectares in the eucalyptus plantations, would require investments of approximately US$ 825 million: US$ 575 million for the industrial complex, US$ 220 million for the increase in plantations, and US$ 30 million to be used for infra-structure, logistics, and other uses. (Aracruz Celulose, 2002c). In order to acquire these resources, the company went to the National Bank for Social and Economic Development (Banco Nacional de Desenvolvimento Social e Econômico, referred to as BNDES), a publicly-owned Brazilian bank which has held stock in the company since 1975. In June, 2001, the bank approved financing for Aracruz's expansion project, in the amount of R$ 666.3 million, to be applied to the construction of the new factory and to the plantation of more eucalyptus groves. In addition, Aracruz Trading S.A, a company that is part of the Aracruz Group and which deals with opening up new markets, obtained a line of financing from BNDES of nearly US$ 100 million. The company also obtained, between February and June of 2001, a total of US$ 180 million from other banks (BNDES, 2002). Exact data on amounts from other loans and/or the company's own capital invested in the project were not available. However, these amounts are relatively less than those already described.

Although nearly all of the cellulose production is exported, a good part of the equipment for the new line of production is imported. Andritz-Ahlstrom, Kvaerner, ABB, Siemens and Voith Paper, companies of European capital, especially German and Norwegian, are among the principal suppliers, involving contracts worth hundreds of millions of dollars. Another company that is key to the project is Jaakko Poyry, a Finnish corporation that has been a consultant to Aracruz since the 1970s and is known internationally for its expertise on forest plantations and cellulose factories (mensagem eletrônica, 2002b).

The construction of Factory C was accomplished in record time, a mere 18 months, according to Aracruz's own data. The EIA/RIMA stated that an estimated 900 jobs would be generated by the construction of the industrial complex, involving a total of 1,920 workers. However, during operations, 173 direct jobs are foreseen, with 113 of these being generated by Aracruz positions and 60 coming from outsourcing (CEPEMAR, 1999).

1.2 INCREASE IN PLANTATIONS

According to Aracruz's data, the eucalyptus groves are vital to the operation of Factories A and B. These include around 170,000 hectares of the company's own plantations in Espírito Santo and Bahia. In addition to company-owned trees, there are 37,000 hectares of plantations in the so-called "Forest Incentives Program," which are planted in lands not owned by the company but by other rural producers in Espírito Santo, Bahia and Minas Gerais (Aracruz Celulose, 2002c).

The Forest Incentives Program was created by Aracruz Celulose in the early 1990s, during a period when the company was prohibited from acquiring more land in Espírito Santo. This program seeks to create eucalyptus-planting contracts with farmers, stipulating that these producers plant on their own lands a certain quantity of hectares of eucalyptus, using seedlings provided by the company, and after harvesting the wood, to sell it to Aracruz. With this program, Aracruz's expanded its eucalyptus monoculture to include lands that had previously been usreach fulled solely for subsistence agriculture.

In order for the factory to reach full running capacity in as little time as possible, Aracruz needed to ensure a fast increase in wood supply. The company's strategies for this included the following:

- The purchase of 45% of the participation of the Odebrecht Group in Veracel, a company that owns plantations in the neighboring state of Bahia. Aracruz became an equal partner in the company, along with the Swedish-Finnish company, Stora Enso. With this purchase, Aracruz acquired 3.5 million cubic meters of wood from Veracel plantations, which will be transported to the new factory by barges, thus giving rise to the need to construct a port in the Bahian municipality of Caravelas, as well as to increase the capacity of Portocel in Barra do Riacho, Espírito Santo, situated next to the Aracruz industrial complex (Aracruz Cellulose, 2002c).
- A frustrated attempt to purchase, along with Votorantim, 51.48% of the shares in Nipo Brasileira Celulose (CENIBRA), which were owned by the Vale do Rio Doce Company (CVRD). Nipo Brasileira Celulose is located in the state of Minas Gerais and was later acquired by another shareholder of CENIBRA: the Japan Brazil Paper and Pulp Resources Development Co. Ltd. (JBP) (Aracruz Celulose, 2000)
- The February, 2002 purchase, in partnership with Bahia Sul Celulose (another company in the sector), of 40 thousand hectares of plantations of the company Rio Doce Forests, S.A, owned by CVRD. This increased Aracruz's forest base in Espírito Santo by 20 thousand hectares, with the remainder being destined to supplying the Bahia Sul factories, located in the southernmost part of Bahia, near the Aracruz plantations. (Aracruz Cellulose, 2002 a).

As a mid-term strategy, the company plans to increase its plantations in Espírito Santo, in Bahia, and, more recently, in Rio de Janeiro, According to Aracruz, there will be an increase of 72 thousand hectares (Aracruz Cellulose, 2002c). However, according to BNDES, the new plantations will add up to a total of 129 thousand hectares, a much larger figure than the one released by Aracruz (BNDES, 2002). We will attempt to to make a summary here of the company's separate activities in the three states:

- In Bahia, the company is in a process of expansion, having already licensed the plantation of an additional 42,000 hectares, of which around 20,000 hectares have already been planted.[2]
- In Espírito Santo, documents regarding the third factory state that the company will acquire 17 thousand hectares for new plantations and will also increase its plantation area by more than 30,000 hectares through the forest incentives program, which involves eucalyptus planting by outside producers (SEAMA, 2000).
- In Rio de Janeiro, the company signed an agreement with the state government in October, 2001 for the plantation of 12,000 hectares in lands to be acquired by the company, along with 30,000 hectares to be planted through forest incentives (Jornal do Brazil, 2002).

Adding the figures from the three states are added together gives a total planted area of 131,000 hectares, which indicates that the BNDES figures are closer to the truth than the information released by Aracruz.

1.3 SOME COMMENTS

Continuous growth

The new eucalyptus plantations that Aracruz is currently implementing will only reach sufficient maturity for harvest in 6-7 years. Continuous, unconditional growth is the categorical imperative of companies such as Aracruz, in order to maintain their foothold in international markets. Aracruz Celulose is the world's largest producer of short-fiber bleached celulose and the company clearly has growth as an objective. In this sense, it is worth emphasizing that at the time of this writing, in the beginning of 2003, Veracel, now with the participation of Aracruz and Stora Enso, is in the process of making a decision on a proposal to construct its first cellulose factory with a capacity of 900,000 tons per year – an investment of nearly US$ 930 million (WRM-Boletim 67, 2003).

[2] Information from CEPEDES, an NGO in the southernmost part of Bahia that is active in research on socio-environmental issues facing the region, especially the expansion of eucalyptus plantations.

This tendency toward continuous growth is also in keeping with the BNDES vision, which, according to one of its own studies on the paper and cellulose sector, during the period 1995-2005, foresees a great opportunity for Brazilian cellulose-exporting companies, due to an expected increase of 3.3% in world consumption (BNDES, 2002), notably by Europeans and North Americans.

Who will benefit from another cellulose factory?

The fact that the vast majority of the machinery used in Factory C is imported is emblematic of a paradox of the Brazilian economy: in order to export in large quantities, large quantities of imports are required. There is a difference, though: the exports are of raw or semi-manufactured products of little aggregate value, while the imports consist of "technology," machinery, and products of higher value, whose sale is guaranteed and underwritten by the export credits of European countries – such as Finland – through Export Credit Agencies (ECAs). This process reveals that decisions over the construction of this type of factory are not merely Brazilian ones, and that the benefits are much greater for Europe than for Brazil. Aracruz's new plant will begin in Europe, with ECA´s, and will also end on the old continent, with the unchecked consumption of disposable paper goods.

It is clear that the credit contracts for these imports valued in the millions, as well as the decision-making processes that accompany them, are not easy to gain access to, whether in the countries of the South or in the North. The European campaign for reforming ECAs and increasing their transparency reaches into the heart of a system that is responsible for deepening imbalances between North and South.

On the Brazilian side, BNDES reproduces the pattern of opacity characteristic of European investment banks. With respect to the values disclosed by the bank and the conditions it imposes for financing and securities of the projects undertaken by large-scale economic groups, be they Brazilian or multinational – Aracruz being one example – apart from the sort of values presented above, there is insufficient clarity and transparency. In any case, the BNDES figures for the year 2000 leave no doubt. The nearly 1 billion Brazilian *reais* in loans to Aracruz's third factory alone stand in bleak contrast to the 600 million reais which comprise the total budget for family agriculture *custeio* and investment programs across Brazil. BNDES invests without attaching the slightest importance to issues of social, environmental, and economic sustainability. It is worth remembering that Factory C generated a total of 113 direct jobs and 60 indirect jobs (CEPEMAR, 1999). Since the total cost of the project was on the order of US$ 575 million, each permanent job cost about US$ 3,323,700.

This startling figure reveals a fact of utmost importance: that the benefits to Brazil in terms of the employment generated by the Aracruz project are extremely limited, since the project fails to contribute significantly to reducing unemployment. And judging by the company's current policies, we can foresee an increase in the dualization between the "categories" of workers. On one hand there are the direct employees of Aracruz, who numbered 1,542 in 2001 (Aracruz Celulose 2002c). Their salaries are higher than the regional average, their jobs are secure, and they enjoy a variety of employment-related services and benefits. But those who are employed through outsourcing and subcontracting (3,037 in 2001) greatly outnumber the regular employees.[3] (Aracruz Celulose, 2002c) They receive lower salaries, have worse working conditions, and enjoy few employment-related services and benefits. Divided among more than four labor unions[4], the workers have lost a great part of their strength in collective bargaining, as evidenced by the extremely limited gains made in recent contract agreements. Outsourcing and the mechanization of cutting have led to layoffs of around ten thousand forest workers in the past 15-20 years. This has been an important factor in diminishing the bargaining power of the unions. With the advent of the third factory, the problem continues unchecked: outsourcing is synonymous with erosion of worker rights. Aracruz Celulose has been named in more than a thousand labor-related lawsuits, nearly 180 of which are on behalf of former plantation workers whose health has been damaged by the use of agrotoxins or who have been disabled by chainsaw accidents[5].

[3] Some former plantation workers, once direct employees of the company, have been re-sub-contracted!

[4] There are three labor unions that represent the plantation workers and one that represents the industrial workforce. The other workers employed through subcontracting are divided into other categories, such as civil construction, metallurgy, port workers, etc.

[5] As of yet there is no precise data on the number of workers laid off, disabled from on-the-job accidents, and court cases filed against the company. Currently, FASE-ES is investigating this situation in preparation for registering an international complaint.

An inauguration marked by protests

Not surprisingly, the official inauguration of Factory C on August 2 by the president of Brazil, Fernando Henrique Cardoso, was accompanied by a protest that took place in front of the main entrance to the company's buildings. Nearly 800 protestors, including landless rural workers, small farmers, indigenous peoples, fishermen, environmentalists, human rights advocates, students, and others demonstrated peacefully against the opening of the new factory. Despite the company's claims to the contrary, support for the project – one with so much public financing, so much production, and so much exportation of semi-manufactured products and importation of state-of-the-art machinery – was far from unanimous. The concrete benefits for Espírito Santo, as previously mentioned, are very few.

The demonstration on August 2 had wide repercussions in the Brazilian media. The presence of then-president Fernando Henrique Cardoso, government ministers, the governor of Espírito Santo, and Aracruz's Norwegian president, Mr. Lorentzen, attracted journalists from the main communications media of Rio de Janeiro (the newspapers *O Globo*, and *Jornal do Brazil*) and São Paulo (newspapers *O Estado de São Paulo, Folha de São Paulo,* and TV *Record*). For the Brazilian media, the case of Aracruz is significant in generating such strong protests in the region where it is located. But as usual, faithful to one of its most important advertisers, the regional media of Espírito Santo (*Rede A Gazeta* and the newspaper *A Tribuna*), limited its coverage to the company's official event, as though Aracruz's expansion had gone unmarked by protests from indigenous groups, quilombo communities, fishermen, charcoal workers, researchers, professors, priests, pastors, NGOs, small farmers, and landless workers.

It is worth pointing out that the illustrious guests who attended the official event that day[6] came largely from outside of the state of Espírito Santo, some even from outside of Brazil. The protestors, on the other hand, were nearly all representatives of the communities in the immediate environs of Aracruz's expansion project. They came from communities located near the factory and in the areas where new eucalyptus plantations are being implemented. The company's effect on these communities, who have not benefited from the new project but on the contrary have suffered the most from the environmental and socio-economic impact of Aracruz's activities, is the focus of this study.

2. ENVIRONMENTAL ASPECTS

2.1 FACTORY C

The utilization of processing technologies: sales come first

In 1978, in the midst of the Brazilian military dictatorship, the company opened its first factory with nary a thought about the pollution it would cause. This lack of concern prevailed until the beginning of the 1990s, when during ECO-92, a Greenpeace ship closed off access to the Aracruz port in protest over the amount of pollution generated by the industrial complex for so many years.

Only after this did the company begin to invest in cleaning up emissions from its plant, as a result of criticisms and of the growing importance that the European market put on environmental preservation. The company's own data show that a significant reduction in emissions began during this period.

Emissions reductions notwithstanding, cellulose production is still extremely polluting. In addition to the generation of organic compounds as measured by the Biologic Demand for Oxygen (DBO5) and the Chemical Demand for Oxygen (DQO), and of atmospheric and solid emissions, another serious problem caused by cellulose production has always been questioned by environmentalists: the use of **chlorine** in the production process. The use of this substance generates more than 200 organochlorates, including dioxin, which is one of the most toxic compounds known to man. (FOE, 1997).

Chlorine is a necessary ingredient in a chemical process for producing cellulose that utilizes sulfate. This manner of producing cellulose, known as the "Kraft" process, is the most widely used. In it, chlorine is used to

[6] It should be emphasized that the directors of Aracruz did not invite their own workers to the official celebration, apparently from fears that their employees, constantly facing the threat of layoffs, might stage a protest.

bleach the product in order to remove the 5-10% of lignine that still remains in the cellulose after de-lignification. The Kraft process is popular because it ensures a high rate of production and efficiency in the use of chemical products, in addition to ensuring that the cellulose produced is of high quality (CPRH, 1998). But at the same time, the Kraft process is more polluting when compared to other alternatives. It is worth mentioning that in Great Britain, factories employing the Kraft process are no longer permitted in densely populated areas, because of the amount of atmospheric pollution generated. (FOE, 1997).

The hazards associated with organochlorate compounds that form during the Kraft process led to the development of two alternative technologies. One of these, called ECF (elemental chlorine free), eliminates the use of elemental chlorine and significantly diminishes the formation of organochlorates. The other, referred to as TCF (total chlorine free), ensures that no organochlorates will be formed during cellulose production. Both technologies result in a significant drop in productivity, TCF more so than ECF (FOE, 1997).

TCF cellulose is preferred by European markets, especially Germany and Austria, and is produced in the Nordic countries. The American paper industry supports the use of ECF, arguing that the additional environmental benefits of TCF are questionable, and that the ECF process is less expensive. Environmental organizations take the more cautious approach, advocating for the use of TCF cellulose, investments in alternative technologies, and on moving toward greater reliance on recycled paper. Even the World Bank, which generally tends toward unmitigated support for large-scale tree monoculture, made the following cautionary statement on policies for the paper and cellulose sector: *"The use of elemental chlorine for bleaching is not recommended. Only ECF processes are acceptable and, from the environmental perspective, TCF processes are preferable"* (World Bank Group, 1998: p.396).

In choosing its production technology for Factory C, however, Aracruz opted for ECF, thus putting profits ahead of environmental precautions, just as it always had in the past. The company's logic is to ensure the sale of its product, serving its customers and encouraging the development of its markets. This was the motivating force behind its short-lived implementation of TCF cellulose production for German markets, which was abandoned in 1999. At the same time, Aracruz never abandoned the use of chlorine for its less environmentally-concerned customers. Since it began operations in 1978 the company has used the standard (STD) production process, a process it continues to use to this day for certain customers. In 2001, the company produced 284,700 thousand tons of cellulose utilizing the standard process – amounting to nearly 22.3% of its annual production (Aracruz Celulose, 2002c). Aracruz's decision whether or not to use chlorine in the bleaching process has nothing to do with environmental concerns, being simply a sales strategy in response to the demands of the market.

It is important to note that the chemical byproducts such as dioxin and other organochlorates that were generated by Aracruz in extremely large amounts, beginning in 1978 and continuing thoughout the first fifteen years of the company's activity, have had long-term effects on living beings that continue to this day. These compounds are non-biodegradable and extremely carcinogenic. It is unacceptable that even today Aracruz, now with Factory C in operation, continues to utilize significant levels of elemental chlorine in its production process (STD).

If it has not been possible to quantitatively document the impacts caused by the industrial complex since 1978, it is because there is no independent, systematic monitoring by state authorities of company emissions as there is in Northern countries. There is also a lack of resources for independent studies and assessments, whether on the part of the State, universities, or civil society. Furthermore, the company itself controls the data sent to the state environmental agency, SEAMA. At the same time, there are no studies on the impacts of company emissions on the local human population and on wildlife.

Water consumption: unsustainability, free of charge

The Kraft production process utilized by Aracruz requires larger amounts of water than other ways of processing cellulose. The daily consumption of Factories A and B reaches 154,000 cubic meters per day. With Factory C, this consumption has risen to 248,000 cubic meters (CEPEMAR, 1999). This level of consumption is equivalent to that of a city with a population of 2.5 million with a per capita consumption of 100 liters per day.

Rather than being up-front about this, in its socio-economic report the company focuses on its success in diminishing its water use per ton of cellulose produced, seeking to distract public attention with less-compromising statistics. This is a clear and unmistakable instance of the "false green" that guides Aracruz's marketing strategies.

Another extremely shocking aspect of the company's consumption of water resources is that since 1978, it has **never paid** for the water it consumes on a daily basis! In addition, according to the president of the Residents' Association of Barra do Riacho, Herval Nogueira Júnior, the company diverted the waters of three rivers and constructed a dam in order to create its current reservoir, an artificial lake next to the industrial complex (CPI documents on Aracruz Cellulose, 2002). With its plans to construct Factory C, by 1999 Aracruz already anticipated that the currently available water resources would be insufficient once its new unit began functioning.

This led the company to develop a new plan for diverting water from the Doce River basin via a canal. However, according to attorney and environmental activist Sebastião Ribeiro Filho[7], the initiative for constructing the canal, dubbed "Caboclo Bernardo", came from the Mayor's Office of the Municipality of Aracruz. A number of irregularities occurred over the course of the licensing process (Ribeiro, 2001):

- Only an Environmental Impact Statement (DIA), was made, although in order to divert water resources, an EIA/RIMA – a more detailed assessment – is required, especially when transposition of hydrographic basins is involved;
- Both the terms of reference of the DIA and the DIA itself were submitted on the same day (27/04/1999) at the State Department on the Environment (SEAMA);
- SEAMA requested that the Aracruz Mayor's Office, which had initiated the licensing request, submit an external evaluation of the project, even though SEAMA has its own legal advisor;
- In the report, the Mayor's consultant states that the water will be used to serve the needs of Aracruz Cellulose. It is therefore strange that it was not Aracruz but the Mayor's Office who requested the licensing process.

Ribeiro concludes that the canal project, already executed by the Aracruz Mayor's Office, is in blatant violation of legal principles. It must be remembered that during a Parliamentary Investigative Commission (CPI) on Aracruz Celulose[8] on June 4, 2002, Herval Nogueira Junior, cited above, stated that it was only through press reports that he learned that the Mayor's Office planned to benefit nearby communities with the canal project, "while Aracruz (Celulose) claimed that it did not need the water but found the project extremely interesting." According to Herval, the Barra do Riacho community currently faces serious problems in its water supply, in terms of quantity as well as quality. He also stated that fishing, the main source of income for the community's residents, has been seriously affected by the diversion of waters by Aracruz (CPI documents on Aracruz Celulose, 2002).

2.2 EUCALYPTUS PLANTATIONS – "DEAD FORESTS THAT KILL EVERYTHING"

It is significant that companies such as Aracruz always refer to eucalyptus plantations as "forests" and to the planting of eucalyptus as "reforestation". The companies do this intentionally, because of the positive connotations that the word "forest" has for most people. Forests are considered to be something that is good and whose existence should be promoted, since there are so few remaining. In this way, the companies confuse public opinion in their favor, since planting trees is part of their activities, and planting trees is assumed to be an activity that brings unconditionally positive results.

But eucalyptus monoculture does not function as a forest in the way that Espírito Santo's Mata Atlântica (Atlantic Forest) does. The Mata Atlântica has more than 240 different species of trees, and also possesses many other attributes that have been historically useful to local indigenous and Afro-Brazilian populations. These peoples' way of life, which revolved around using the forest, was destroyed by deforestation initiated by Aracruz Celulose during the 1960s and 1970s in making way for its eucalyptus plantations. Perhaps the

[7] Registered in the Brazilian Bar Association (OAB), number número 4.060

[8] The CPI was begun in March, 2002 by the Espírito Santo Legislative Assembly in order to investigate possible irregularities in the licensing of Aracruz Celulose's Factory C. Thus far, the CPI has served as a forum for registering complaints about the innumerous impacts caused by Aracruz's activities throughout its 35-year history in the state of Espírito Santo.

problem is most eloquently expressed in the words of a Tupinikim leader, who defined a eucalyptus plantation as "a dead forest that kills everything."

The widespread assumption that "forests" and "tree plantations" are synonymous terms has colored the debate over whether the contribution of the paper and cellulose industry has been positive or negative in fighting global warming. Aracruz claims that eucalyptus plantations "trap" carbon, just as forests do, and that because of this, the expansion of eucalyptus groves contributes to reducing global warming. However, a study by the International Institute on the Environment and Development (IIED), concludes that the activities of the paper sector result in a net *addition* of 450 million tons of CO_2, considering the emissions produced during wood cutting, production, and transportation of paper and cellulose, in addition to the collection and treatment of the garbage that results from paper products. (IIED, 1996).

The plantations created through Aracruz's current expansion project generate direct environmental impacts at the local and regional level. In the municipality of Vila Valério, a region where family agriculture predominates, representatives of the Small Farmers' Movement (MPA) allege that the company has already planted around 1,500 hectares. The farmers list the following environmental problems:[9]

- The first step is clear-cutting, which includes not only removing all existing vegetation, but also houses and any other structures. The company permits only a uniform landscape of eucalyptus monoculture.
- Application of herbicides in preparing the soil for planting, so that the eucalyptus will not have to compete with any other plant life. Before the herbicides are applied, a warning is issued prohibiting local residents from entering the area. In a document dated February 20, 2003, the MPA registered a complaint with the authorities over the contamination of the rivers and streams in eucalyptus plantation areas through its use of a number of herbicides: roundup (glyphosate), tordon (picloran) and 2,4 D, in addition to a product referred to as *'amarelão'* (big yellow), which is probably a fungicide. In the plantations a formicide is also used (mirex-S) and an insecticide (scout). In April of 2002, agricultural worker Aurino dos Santos Filho, aged 34, died in the field while applying agrotoxins. After a complaint was lodged by the MPA, the Federal Public Ministry in Espírito Santo opened an inquiry on the excessive use of agrotoxins by Aracruz Celulose (Séculodiario, 2003).
- The lands purchased by Aracruz are level and fertile, the best in the municipality. Such lands should not be destined for eucalyptus plantations but should be used for planting food crops, to ensure food security in a country where millions of people are undernourished and the new Federal government has initiated a Zero Hunger Program as the main priority of its four-year administration.
- The MPA, organized in the region via the Rural Workers' Union of São Gabriel da Palha and Vila Valério, told of the experience of one farmer whose organically-grown crops were threatened by the purchase of adjoining lands by Aracruz. In this sense, Aracruz is going against the tide of history, because the region's small farmers are more and more committed to following agro-ecological principles and are no longer accepting monoculture and the large-scale application of agrotoxins. The MPA supports a new model of diversified agriculture based on agro-ecology and on generating jobs and income for rural families.

Through the Second Forest Incentives Program (see section 3.3) the company has even supplied pesticides and herbicides to farmers, along with the eucalyptus seedlings, thus encouraging the growers to continue using agrotoxins.

2.3 THE LICENSING PROCESS OF FACTORY C

State omission

A key point in the environmental licensing process is that the population directly affected by the development can have access to the EIA/RIMA and in this way can influence the licensing process, by participating actively in creating social and economic stipulations to the license that eliminate or at least minimize the foreseeable negative impacts of the project under evaluation. Such public participation has perhaps been the most significant gain made by this this new Brazilian legislative tool. We shall see how this participation was

[9] This information was collected from members of the coordinating committee of the state Small Farmers' Movement (MPA) in the year 2002.

restricted in the case of the proposal for Aracruz Celulose's Factory C and how the State of Espírito Santo, responsible for the licensing process via the State Department of Environmental Affairs (SEAMA), was negligent throughout the entire process, looking the other way regarding the clearly evident impacts directly related to the third factory and the new plantations.

The limitation of public participation in the licensing process

According to the EIA/RIMA for Factory C, the delimitation of the project's "areas of influence" is a legal requirement for evaluating its environmental impacts (Resolution by CONAMA 01/86). However, for no justifiable reason, the project's EIA/RIMA – done by the consulting agency CEPEMAR, a historic ally of Brazil's large cellulose companies – limits the area of influence and scope of the study to include merely the actions and emissions of the industrial project itself (Factory C), "since the project being proposed will not bring about any sort of increase in the area of Aracruz Celulose's eucalyptus forests in the state of *Espírito Santo..."* (CEPEMAR, 1999: p. 63).

As a direct consequence of this statement, during the licensing process, only one public hearing was held to assess the results of the EIA/RIMA. During this hearing, which occurred in the municipality of Aracruz, on February 14, 2000, questions on broader issues, especially that of whether Aracruz Cellulose planned to increase its plantations in Espírito Santo, were rebuffed by company representatives, SEAMA and CEPEMAR. All of these alleged, as did the EIA/RIMA itself, that there would be no increase in the area of eucalyptus plantations in Espírito Santo.

The authors of the present study attended this public hearing and saw that the plenary was packed with uniformed workers who were clearly there at the request of the company. These workers formed a bloc that stood ready to applaud any statements made by the company or the State, arguing in unison for the "sustainability" of the new project. At the same time, the indigenous communities and fishermen, who are the industrial complex's nearest neighbors, had not even been invited to the hearing, which constituted their only opportunity to voice an opinion over the company's plans to construct an additional cellulose factory in their backyard. Moreover, the project in question was not a small one, but the largest complex of its type in the world.

A fast licensing with surprising clauses

In record time, a mere 30 days after the only public hearing on the subject, on March 16, 2000, SEAMA conceded the license for the construction of Factory C, with surprising stipulations added to the license. Clause 10 provides one example:

"To implement, over a seven-year period, beginning in 2001, a program in partnership with farmers, to produce eucalyptus wood in an area of at least 30,000 hectares, giving the producers the contractual option to exploit the product in ways other than as cellulose, in this way favoring a basic condition for the implementation by the State of at least one large scale Wood Solids Unit (sawmill). Time limit: 90 days, to establish along with SEAMA and SEAG (State Agriculture Department) the bases of the above-mentioned program." (SEAMA, 2000)

This clause contrasts with the authorities' statements that the proposal to increase the company's production capacity would not result in any increase in the area dedicated to eucalyptus plantations. Moreover, this clause is contrary to logic, since it appears to *oblige* Aracruz to do something it has always done anyway – to plant eucalyptus – when licensing stipulations should consist primarily of measures to minimize the negative impacts of the project. But in this case, the clause constitutes a business strategy that in itself generates negative impacts.

Because of this, the clause is currently being questioned in Espírito Santo state court by environmental attorney Sebastião Ribeiro, via a Public Action against Aracruz Celulose and the Institute for Agrarian and Forest Defense (IDAF), the agency that conceded the license to Aracruz Celulose for implementing the program of 30,000 hectares of eucalyptus plantations, referred to as Forest Incentives II, as a continuation of Forest Incentives I. On August 9, 2002, Judge Alaimar Ribeiro de Souza Fiuza of the Office of Public Registry ruled in favor of the signatories to this public action, alleging that the Forest Incentives II program was illegal, since the IDAF did not require an EIA/RIMA. This kind of assessment is legally required for any

silviculture plantation of over 100 hectares, and in this case, the planted area amounted to 30,000 hectares! At the same time, the judge decided to immediately suspend Forest Incentives II. Later, Aracruz managed to temporarily overrule the judicial order.

Finally, to this day there has been no sign of a large scale Wood Solids Unit being implemented. On the contrary, we have seen that the plantations made via Forest Incentives II are utilized solely for increasing the supply of raw materials for the Aracruz Celulose complex.

Clause 24 is also noteworthy, since instead of imposing a stipulation, it actually removes the only regulation that had existed at that point to further land acquisition by the company:

"As a clarification: it is decided that there is no sort of prohibition in the State of Espírito Santo pertaining to the plantation of eucalyptus and the acquisition of lands by Aracruz Cellulose S/A, thus removing any doubts as to the interpretation of clause 15, imposed by the Environmental License of Factory B in 1988, according to environmental criteria." (SEAMA, 2000)

First of all, we should note that in this clause, SEAMA authorizes Aracruz to increase its landholdings, even though on the date of the license, the company already possessed the largest landholdings in the state of Espírito Santo, with 122,433 hectares (*A Gazeta* newspaper, 2001). By contrast, most small farmers in Espírito Santo have properties amounting to less than 10 hectares. It was precisely this vast concentration of landholdings that led the government in 1988 to prohibit Aracruz from purchasing more land.

Second, with regard to the obligation placed on Aracruz by SEAMA in this clause to follow environmental criteria, the testimony made by Sérgio Moraes Neto, attorney for IDAF, during the CPI on Aracruz Celulose on June 18, 2002, should be remembered. Moraes stated that no case related to forest licensing came through the agency's legal department and that during his entire career at the institution (18 years), he was only once asked to assess a process involving Aracruz. He observed that that one case was full of irregularities. Under questioning by elected officials, IDAF's attorney concluded that by virtue of there not having been any legal assessment of other processes involving Aracruz, all licenses that had been given to the company should be considered illegal, and as such, null (Autos da CPI da Aracruz Celulose, 2002).

3. SOCIO-ECONOMIC ASPECTS

During the opening ceremonies for the third factory, the president of Aracruz Celulose stated that "the development stimulated by companies such as Aracruz occurs in the interior of the state, bringing great environmental and social benefits." In analyzing more closely the situation in the Espírito Santo countryside, we will see that exactly the opposite is true.

3.1 THE EXPULSION OF FAMILIES FROM THE COUNTRYSIDE

According to information from the MPA, since last year, with the purchase of nearly 5,000 hectares in the municipality of Vila Valério, more than 100 families have been expelled and many others lost temporary jobs. The large number of families displaced stems from the fact that they did not have deeds to their land. Rather than being landowners, they were what is referred to as *meeiros* or sharecroppers, who live on the land they farm and give a pre-determined share of the crops and/or profits to the owner, as a form of rent. In the case of Vila Valério, the *meeiros* make their living by planting coffee.

When landowners who had sharecroppers on their lands opted for selling their lands to Aracruz, at the same time they were condemning the sharecroppers to eviction. This was the beginning of a tragic drama of families being forced to leave their lands and homes. The MPA cited cases of farmers who were not even given the right to harvest the year's coffee crop. The company's tractors demolished the families' homes and also razed thousands of coffee bushes that had been the means of survival for these families and day-laborers who had worked the fields during harvests. Forced to leave everything behind, the sharecroppers migrated to urban peripheries of the state in search of jobs, often in vain. In the slums of these cities they became caught up in the cycle of urban problems and violence.

In Jaguaré, also in the north of Espírito Santo, 14 sharecropper families were expelled from Fazenda Barba Negra, where they had been coffee farmers. According to the deputy mayor of Sooretama, during a public hearing on agro-ecological zoning in São Mateus on March 5, 2002, five of these families ended up in Sooretama knocking on the door of the city government requesting food assistance. During the same hearing, the deputy mayor also stated that in the adjacent municipality of Linhares, around 700 workers employed by a papaya plantation lost their jobs when the land was bought by Aracruz. There are still no exact figures on the number of people who were expelled and day laborers who lost their jobs as a result of Aracruz's land purchases.

3.2 LAND REFORM PARALYZED

Aracruz's preference for purchasing flat, fertile land in parcels of more than 100 hectares resulted in the company competing for lands that could have been disappropriated for land reform. The situation becomes more serious because of the prices that the company paid for the land – often two or three times higher than the market value. Although Aracruz did not have any difficulty paying for the land it bought, the National Institute for Settlement and Land Reform (INCRA), the federal agency responsible for land reform, has a much smaller budget for land disappropriation; in fact, it has not disappropriated any properties in Espírito Santo in recent years. For obvious reasons, potential sellers prefer to sell their lands to Aracruz. According to data from the Landless Workers' Movement (MST) there are nearly 65,000 families in Espírito Santo who are waiting for plots of land, and the expansion of Aracruz Cellulose presents the single largest obstacle to land reform in the state. INCRA's own staff confirms the MST's concerns on the matter. In the state of Rio de Janeiro, when Aracruz tried to acquire lands for new plantations, INCRA staff reacted against the plantations, due to the number of families waiting to be settled.

In frustration, the MST of Espírito Santo occupied the aforementioned Fazenda Barba Negra in Jaguaré in September of 2001, protesting against the purchase of lands by Aracruz and against the negative impact of this on land reform. A number of organizations in the municipality, including rural family schools, the small farmers' association, organic farmers, and the Catholic Church, became active in organizing meetings and conferences, and in pressuring local government authorities to implement policies to assist displaced families. These organizations preferred to have MST settlements as neighbors rather than living cheek-by-jowl with mechanized monoculture and eucalyptus intoxication. However, the occupying families were expelled some weeks later, due to a court repossession order by the state court, which interpreted the law at its bare minimum, in Aracruz's favor.

3.3 GROWING RESISTANCE: EUCALYPTUS PLANTATIONS PROHIBITED BY LAW

In conjunction with more than eighty other entities in the Green Desert Alert Network, in the year 2000 the MST supported a legal bill sponsored by state congressman Nasser Youssef, which prohibited the creation of new eucalyptus plantations in Espírito Santo, until after an agro-ecological mapping or zoning had been completed to specify where eucalyptus could or could not be planted. This bill was approved by the Espírito Santo Legislative Assembly in May, 2001, but was later vetoed by the state governor, under pressure from Aracruz Celulose. Immediately, the Green Desert Alert Network put strong pressure on the state assembly and initiated campaigns to inform the public on the issue, and on October 6, 2001 the governor's veto was overturned and the bill became law (number 6.780/01).

Through the efforts of five member organizations – FASE, the Brazilian Association of Geographers (AGB), the MPA, the MST, and the Espírito Santo Federation of Agricultural Workers (FETAES) – the Green Desert Network actively participated in creating the map of agro-ecological zones. Ten public hearings were held in the state, each attended by an average of 100 representatives from local communities. The vast majority of these representatives made it very clear that 1) they are against the purchase of further lands by Aracruz; 2) they support a program of "forest incentives" that is not oriented toward cellulose but towards farming needs, for re-forestation that emphasizes native species and for the protection of water resources; and 3) that a serious agricultural policy on the part of the government is lacking. They also registered complaints against the wholehearted support that Aracruz's projects and goals receive from the State.

The task of agro-ecological zoning came to a halt in June, 2002, by decision of the Federal Supreme Court (STF), which held Law 6.780/01to be unconstitutional. It should be noted that the court certainly gave more weight to the legal arguments made by Aracruz Celulose than to environmental, social and economic impacts that the indiscriminate planting of eucalyptus in the state has been causing over the past thirty years.

At the same time, in the southernmost parts of the state of Bahia, eucalyptus plantation continues, even though the region is in urgent need of agro-ecological zoning. Nearly 300,000 hectares have already been dedicated to eucalyptus in a relatively small geographical area, threatening food security, precipitating rural exodus, and generating unemployment, as well as many other impacts.[10]

In Rio de Janeiro, Aracruz signed an agreement with the state government in October, 2001. However, in June, 2002, the state executive branch, under the leadership of a new governor, Benedita da Silva of the Workers' Party (PT), decided to cancel the agreement, making it illegal for the company to initiate new plantations until the beginning of 2003, when another governor assumed control. Aracruz intends to begin its Rio de Janeiro operations in one of the few regions of the state that has been suggested as a possibility for land reform. In December, 2002, the Legislative Assembly of Rio de Janeiro approved a law on "Economic-Ecological Zoning" that was sanctioned by the state executive branch in January, 2003. Thus, a great obstacle was created to future implementation of eucalyptus monoculture plantations by Aracruz in the Campos and Macaé regions in the northern area of the state of Rio de Janeiro.

3.4 MORE EUCALYPTUS MEANS LESS EMPLOYMENT AND LESS INCOME

According to data from IDAF, despite the temporary ban on new eucalyptus plantations, in Aracruz Celulose's proposal for expansion the company had already obtained additional lands whose area added up to 20,361.43 hectares by October, 2001. At that time it had also closed on 312 contracts for forest incentives with rural producers whose properties varied in size from 2 to 100 hectares (IDAF, 2001).

Eucalyptus plantations compare poorly with other agricultural alternatives. According to a 2002 study by the chief of the INCAPER office in Santa Maria de Jetibá, Edegar Antônio Formentini, one hectare of land utilized for raising fruits, vegetables, and grains generates an income of R$ 12,000 per year. By contrast, one hectare of eucalyptus plantation generates only R$ 395 per year. The study examines the costs and prices of 24 agricultural products, compared to eucalyptus. The results of this research show that the eucalyptus is not a crop that serves the best interests of rural producers (INCAPER, 2002).

In another study, conducted in 1999 by the Lutheran Seeds Foundation (Fundação Luterana Sementes) the plantation of eucalyptus was shown to provide an income of R$ 700 per hectare per year, as opposed to guava, which can generate R$ 30,000 per hectare. According to this study, planting coffee, coconuts, bananas, limes, and mangoes all generate 9-20 times more than eucalyptus for rural producers (O Semeador, 1999). In addition, fruit growing generates 10 direct jobs per hectare, while the Aracruz Celulose model, taking into account the land area utilized by the company and the number of direct and indirect jobs, generates just one job for every 44 hectares. This is without taking into consideration the hundreds of families displaced from their lands after the land was acquired by the company (Seminário, 2000).

If eucalyptus plantations are not an economically viable option, then why did the 312 producers in the Forest Incentives II program (IDAF, 2001) choose this option?

In the first place, forest incentives have drawn converts because over the past few years, most small farmers in the region have been going through a period of tremendous difficulty because of a "coffee crisis" stemming from a drop in the international prices of this export crop. The decision to opt for forest incentives is, in many cases, made out of desperation, from the sense that there is no other option. Due to the inadequacy and insufficiency of public policies geared towards supporting this vast sector of the Espírito Santo economy, nearly 70,000 families, some small farmers, looking for a way out of the downward spiral in which they found themselves, were lured by the attractions of the forest incentives program. In an era when their children look more and more to the cities for jobs, income, and education; and when many farmers have already sold or rented their lands, Aracruz's monoculture reaps the benefits of the effects of this crisis on the remaining

[10] Information from the NGO, CEPEDES

farmers, and its so-called Forest Incentives take root because of the lacunae in and in the absence of State policies to support small farmers.

Another important reason that the idea of eucalyptus plantation is appealing to rural producers is because there are no initial costs, since Aracruz supplies the seedlings and other supplies needed for the plantation, including the agrotoxins, which are extremely expensive. The only investment for the grower, therefore, is his labor. It should be remembered, however, that 6-7 years later, at harvest time, the wood must be delivered to the Aracruz industrial park at the grower's cost, and at that time, the value of the seedlings and growing supplies are discounted from the price that Aracruz pays for the wood.

3.5 EUCALYPTUS PLANTATIONS DO NOT GENERATE TAX REVENUES

The increase in eucalyptus plantations has had indirect costs for the entire population of the state of Espírito Santo. Aracruz Cellulose, as a business involved in exporting its products, benefits from federal legislation known as the Kandir Law, which holds exports exempt from ICMS taxes (sales taxes). The cellulose produced by Aracruz thus is tax-exempt. What's more, the company even has the right to credit for the ICMS taxes it pays on the supplies and raw materials needed for the production process. Because of such loopholes, by the end of the year 2000, Aracruz had accumulated R$ 79.4 million Brazilian reais in tax credits. (Aracruz Cellulose, 2002b). Today, the state of Espírito Santo owes more than R$ 100 million to Aracruz, and is in no position to pay off this "debt."

Because of this, when Aracruz purchases an area of land where coffee is planted and replaces it with eucalyptus, the resources of the state of Espírito Santo for investing in health care, education, and other basic social services dwindle, since regular agriculture and especially family agriculture generate much more in tax revenues. This is especially problematic for the local tax revenues of the municipalities where the plantations are located. On March 5, 2002 a public hearing on agro-ecological zoning was held in the municipality of São Mateus, one of those most strongly affected by eucalyptus plantations in the state. During this hearing, the local Secretary of Agriculture stated that the 25,000 hectares in the municipality that are utilized for family agriculture generate an annual income of R$ 100 million and employ between 15,000 and 20,000 people. But the 50,000 hectares that are dedicated to eucalyptus monoculture generate an annual income of only R$ 20 million, and the total number of indirect and direct jobs generated is only 3,000 (Proceedings of the public hearing on agro-ecological zoning, 2002). The income from family agriculture, which is nearly 11 times greater than that of eucalyptus plantations, generates much more in taxes than eucalyptus does.

Finally, it is worth noting that the importation of machinery from Europe for Factory C is also tax-exempt. With the average import tax rate of 12.3%, imagine the amount of tax revenues that could be generated for the state of Espírito Santo from this machinery for cellulose production, valued at hundreds of millions of dollars!

4. FINAL CONSIDERATIONS AND RECOMMENDATIONS

Given that the general objective of the present report is to contribute to a preliminary assessment of the social, economic, and environmental impacts related to the third cellulose factory of Aracruz Celulose S/A, in Espírito Santo, Brazil, a few recommendations are appropriate.

The experiences, information, and data described in this study suggest that the Credit Export Agencies and Northern investment banks, in providing credit or security to companies that furnish machinery and/or technology to paper and cellulose factories and industrial plants in the South, should take the following precautions so as to avoid contributing to socio-environmental devastation in the South.

1) Request a copy of the Environmental Impact Assessment (EIA/RIMA) of the (agro)industrial project to be supported.
2) Analyze the information contained in the EIA/RIMA, along with other information on the environmental, cultural, economic, social, and human rights situation in the project region.
3) Apply rigid social and environmental criteria in making a decision. We suggest the following:

- The existence of agro-ecological zoning for the area, created with public participation, indicating the areas to be designated for tree plantations.
- The plantations should not be concentrated in contiguous areas but in lots no larger than a few hectares. Monoculture and a uniform landscape should be avoided, and in creating diversity, factors such as age, cycles, and sub-species should be taken into account, as well as whether the species are exotic or native. Plantation design should take into consideration not only physical aspects of the terrain but also social, cultural, and economic aspects, so that individual families and communities do not become islands surrounded by monoculture fields. The sacred aspects of certain lands and the specific traditions related to them should be respected. Part of the wood extracted from the plantations should be utilized for multiple uses by the civil society of the area.
- Transparency with regard to the use of agrotoxins. How many are used, which are used, why are they used, how are they used? The company should comply with a strategic plan for progressive reduction in agrotoxin use. In forest incentives contracts, the use of agrotoxins should not be the responsibility of the family farmers.
- The company should not be permitted to use elemental chlorine in the cellulose-bleaching process, regardless of the demands of the market. It should also meet requirements for gradually replacing the use of the ECF process with the TCF one.
- There should be no violation of the economic, social, or cultural rights of the traditional populations inhabiting the land, unless there is due compensation. The land and water rights of these populations should be ensured.
- The use of water as a basic component of cellulose production, as well as the diversion of rivers and the construction of dams and/or reservoirs for supplying the industry, should not be permitted to interfere with neighboring communities' fishing activities or normal water use. In addition, there should be no contamination of any rivers and streams that traverse the plantations by company-used agrotoxins. Planting-harvesting cycles of longer duration should be encouraged, so as to permit a more favorable hydric equation between the trees and the environment.
- The company should not be permitted to compete for lands that may be destined to land reform or reforestation with native forest.
- The outsourcing and sub-contracting systems for hiring labor, whether it be in the plantations or in industry, may not translate into reductions of salary or degradation of working conditions. The company must complete a strategic plan for progressively reducing the differences between the two forms of employment, so that eventually the polarization of the category into "included" and "excluded" workers is eliminated.
- Direct and indirect unemployment caused by new machinery or technology imported by the company should require a specific plan, created in dialogue with the public, which ensures the rights of displaced workers and their families until such time as they find new employment at equivalent income levels, with no deterioration in terms of quality of life.
- The company's marketing strategies should bear no evidence of manipulating public opinion, in terms of selectively divulging figures that attenuate the real impacts on the environment and on society. With respect to regional media, the company should make public the amounts invested in advertising in the different communications media.
- The company should create and comply with a strategic plan for wood scraps left in the fields after cutting, in order to monitor the extraction of wood for charcoal production or other uses, and impeding the action of agents that engage in the exploitation of child labor and sub-human working conditions.
- The company should not be under congressional investigation, class action suits, or significant judicial proceedings, nor should it have a large number of labor and environmental grievances.

4) The environmental, economic, social, and cultural impacts of the project should be monitored.

We recommend that the **Environmental Impact Assessments (EIAs)** be:

1) independent;
2) of broad scope and carefully thought out;
3) capable of mapping a wide array of local discourses, in terms of the different social groups directly and indirectly implicated in the areas affected by the industrial-plantation project;
4) Complete in the sense of giving special attention to critical statements, especially in cases of conflict.

And, finally, the **Brazilian authorities** should:

1) Create agro-ecological zoning for the area, with broad participation from civil society, as a precondition for any large-scale plantation involving monoculture and the concentration of landholdings. The zoning for the area should put priorities on food security and the division of land into diversified forest per se, before specifying any areas for industrial plants;
2) Perform systematic environmental monitoring of the project or enterprise;
3) Ensure that state environmental licensing is based on an EIA/RIMA and other independent studies, also permitting wide, informed participation by the public in the discussion over stipulations to the project's license.

Clearly, these are merely some preliminary contributions to the debate, ones that may be added to a range of other experiences directed toward the democratic construction of more adequate principles and criteria for regulating and insuring investments in projects with social and environmental impacts. In addition to producing criteria and guidelines, we must also generate processes that stimulate the involvement of those who are most affected by the project: local communities and populations who live in the places where the projects are implemented.

LIST OF ABBREVIATIONS

AGB – Associação dos Geógrafos do Brazil (Brazilian Association of Geographers)
BNDES – Banco Nacional de Desenvolvimento Econômico e Social (National Bank for Economic and Social Development)
CENIBRA – Celulose Nipo Brasileiro (Nipo Brazilian Cellulose)
CONAMA – Conselho Nacional de Meio Ambiente (National Environmental Council)
CPI – Comissão Parlamentar de Inquérito (Parliamentary Investigative Commission)
CVRD – Companhia Vale do Rio Doce (Valley do Rio Doce Company)
DIA – Declaração de Impacto Ambiental (Environmental Impact Statement)
ECA – Export Credit Agency – *Agência de Exportação de Crédito*
ECF – Elemental Chlorine Free
EIA/RIMA – Estudo e Relatório de Impactos Ambientais (Environmental Impact Assessment and Report)
FASE – Federação de Órgãos em Assistência Social e Educacional (Federation of Organizations for Social and Educational Assistance)
FETAES – Federação dos Trabalhadores na Agricultura do Espírito Santo (Rural Workers Federation of the State of Espírito Santo)
IDAF – Instituto de Defesa Agrária e Florestal (Institute for Agriculture and Forest Defense)
INCAPER – Instituto Capixaba de Pesquisa, Assistência Técnica e Extensão Rural (Espírito Santo Institute for Research, Technical Assistance, and Rural Extension)
MPA – Movimento dos Pequenos Agricultores (Small Farmers' Movement)
MST – Movimento dos Trabalhadores Rurais Sem Terra (Landless Workers' Movement)
SEAMA – Secretaria Estadual de Assuntos de Meio Ambiente (State Department for Environmental Affairs)
STF – Supremo Tribunal Federal (Federal Supreme Court)
TCF – Total Chlorine Free

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