

SOY WORK GROUP

Moratorium Monitoring Methodology for the 2010 Soy Crop

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1. Soy Moratorium in the Amazon Biome

1.1 Background

The Soy Moratorium in the Amazon Biome is a commitment made by the members of ABIOVE and ANEC not to acquire soybeans from areas deforested after July 24, 2006.

The Soy Work Group (GTS) was created to make the Moratorium operational, with the participation of the following civil society organizations: International Conservation, Greenpeace, IPAM, TNC and WWF-Brasil, and divided into three subgroups: Mapping & Monitoring, Institutional Relations, and Education, Information & Forest Code.

The Bank of Brazil and the Ministry of the Environment also took part in the discussions and made commitments to execute various strategic actions to improve governance and reduce deforestation.

1.2 Renewal in 2008 and 2009

Because of the Moratorium's positive results in bringing together players from the business sector, civil society and government, the initiative became recognized as a model for the dialogue that is important for a better understanding of the causes of deforestation in the Amazon Biome. The information generated since the declaration of the Moratorium in 2006 has made it possible to increase the level of awareness regarding the factors that lead to deforestation, and it shows that soybeans are not relevant in this process.

Improvement in the level of information and the need for perfecting governance of the Amazon Biome prompted ABIOVE and ANEC members to renew the Soy Moratorium in June 2008, and again in June 2009 for a further twelve months. The private sector is thus meeting society's demand for sustainable production of soybeans and extending its efforts to encourage the public sector to fulfill its role as the agent responsible for solving the causes of deforestation.

2. Monitoring Deforested Areas in 2007/08 and 2008/09

2.1 Methodology

The purpose of monitoring is to verify whether areas deforested after the Moratorium was declared in July 2006 are being used to plant soybeans and to guarantee that this product is not acquired by the Moratorium's signatories. However, the Amazon Biome's vast area and the distance and spatial dispersal of the deforested polygons make it difficult to monitor all the polygons.

A joint GTS decision established the criteria for selecting relevant areas for this purpose, in other words for areas with a minimally significant production of soybeans. Information was thus generated on polygons with over 100 hectares, based on the official deforestation data produced by INPE/PRODES, the Amazon Deforestation Calculation Program of the National Land Research Institute, according to the following GTS criteria:

- a. Amazon Biome: areas totally or partially within its boundaries;

- b. States of Mato Grosso, Pará and Rondônia: the main soybean producers in the Amazon Biome;
- c. Areas located outside of protected areas (Conservation Units and Indigenous Reserves);
- d. Towns whose current crop or that predicted for the next year indicated a soybean acreage of over 5,000 hectares, based on data from IBGE, Brazilian Geography & Statistics Institute, and statistical estimates prepared by the GTS.

A Pilot Project, based on PRODES 2007, monitored all areas with less than 100 hectares in the towns of Feliz Natal, União do Sul and Vera in Mato Grosso state to understand land use and occupation in these smaller polygons.

From the data bank thus generated, locations were selected for flyovers and field visits to identify land use and occupation in the polygons, recording the results in an individual technical register, as well as preparing maps and reports.

2.2 Results

The 2007/08 and 2008/09 crop monitoring analyzed a total of 207,705 hectares distributed in 895 polygons, according to Table 1:

Table 1 – Comparison of Monitoring in 2007/08 and 2008/09

State	Monitored Area (hectares)		Number of Polygons	
	2007/08	2008/09	2007/08	2008/09
Mato Grosso	35,492.89	123,415.42	211	506
Pará	13,629.88	31,006.73	52	112
Rondônia	686.37	3,474.22	2	12
Total	49,809.14	157,896.37	265	630

The 2007/08 results showed no soybean planting in any of the 265 monitored polygons, covering an area of 49,809.14 hectares.

In the second year, twelve polygons were found to have soy crops, a total of 1,384.96 hectares. This is just 0.88% of that year's monitored area. These polygons are listed in Table 2, with information related to its location, total area and soybean acreage, as well as the property's legal situation with the state environmental entity. As can be seen, all the Mato Grosso polygons with soybean acreage were located on properties already in the process of obtaining environmental licenses.

Table 2 – List of Polygons with Soybean Acreage in the 2008/09 Monitoring

ID	Town	State	Polygon's Total Area (hectares)	Soybean Acreage (hectares)	Property's Legal Environmental Situation
PILOT PROJECT					
53	Feliz Natal	MT	58.62	38.62	Licensing underway
55	Feliz Natal	MT	24.53	24.53	Licensing underway
56	Feliz Natal	MT	59.96	59.96	Licensing underway
60	Feliz Natal	MT	30.40	30.40	Licensing underway
62	Feliz Natal	MT	49.46	35.74	Licensing underway

ID	Town	State	Polygon's Total Area (hectares)	Soybean Acreage (hectares)	Property's Legal Environmental Situation
Subtotal – Pilot Project			222.97	189.25	
PRODES 2007					
74	Feliz Natal	MT	165.52	5.41	Licensing underway
144	Gaúcha Norte	MT	256.36	45.44	Licensing underway
335	Querência	MT	865.95	630.95	Licensing underway
421	Sinop	MT	149.86	149.86	Licensing underway
516	Dom Eliseu	PA	132.10	112.92	Information unavailable
520	Dom Eliseu	PA	258.57	247.32	Information unavailable
Subtotal – PRODES 2007			1,828.36	1,191.90	
PRODES 2008					
102	Feliz Natal	MT	105.52	3.81	Licensing underway
Subtotal – PRODES 2008			105.52	3.81	
Overall Total			2,156.85	1,384.96	

3. Monitoring of the 2009/10 Crop

For this crop, the GTS decided to incorporate a new, more advanced tool in the monitoring process, one that was specially developed by INPE to detect soybeans in deforested areas. This new technology allowed a significant increase in the monitored area and in the number of polygons analyzed, as well as the incorporation of smaller strata, as described in Section 3.1.

By interpreting MODIS satellite images, these techniques allow the elimination, with a high degree of precision, of most areas whose land use and occupation is not the object of the Soy Moratorium, i.e., those areas with no soybean acreage. INPE ran a test with MODIS and LANDSAT satellite images to verify the presence of soybeans through an algorithm specially developed for this purpose, concluding that INPE's proposed method has a high level of reliability as interpretation of MODIS satellite images of polygons with more than 50 hectares were proven correct in 80% of the cases, compared with high resolution LANDSAT images.

These results were also compared with the 2007/08 and 2008/09 monitorings, confirming that it would be possible to eliminate, with about 90% precision, areas that are not the object of the Moratorium, such as pastures, natural regeneration and others. In this way, field visits to confirm land use and occupation were only necessary in some of the areas showing signs of temporary crops.

The tool is also highly reliable in the selection of areas with possible soybean planting, because all areas effectively planted with soybeans were classified as annual crops and therefore selected for field verification, thus minimizing the risk of inadvertently excluding soybean acreage.

3.1 Criteria for Selecting Areas

December's satellite images are chosen because the field survey must be done before the soybean harvest, which is mostly in February. The polygons considered were:

- a. All polygons in Mato Grosso, Pará and Rondônia states with more than 50 hectares classified by INPE as probably having soybeans;

- b. Polygons with more than 25 hectares that adjoin a soybean crop.

Monitoring also dealt with the long-term tendency of deforestation in small areas by including all the polygons that, together, had a minimum acreage relevant for soybean production.

Polygons with less than 50 hectares, not adjoining soybean crops, were not considered because it is not economically viable to plant the oilseed in isolated areas, thus making the probability of its occurrence virtually zero.

In addition, properties located in settlements were not included due to operational difficulties.

4. Conditions for Soybean Purchases

Rural properties that failed to comply with the Moratorium's requirements were automatically included in a list of non-conformity. Registration data for such properties, the names of the owners/lessees, spouses and income tax registration numbers were forwarded to the trading companies, which blocked purchases of production from these properties.

This list also served as the basis for applying measures to restrict credit for the next crops. Registration of the property and an environmental licensing protocol are the conditions for exclusion from the non-conformity list.

4.1 Production Pre-Purchase

Where production was pre-purchased, as evidenced by a contract signed before the deforested area was included in the Moratorium list, the purchasing company received only that part of the contracted volume that corresponded to the production in areas deforested prior to the property's inclusion in the list.

This procedure is necessary to preserve the production and trading program of the purchasing company that acted in good faith, as well as avoid economic losses from market variations and the failure to refund the monies advanced, which would reward the non conforming producer.

The purchasing companies used data from the property's registration and other documents to calculate the total quantity produced and the quantity produced on the area deforested after July 2006, and did not accept this last quantity.

4.2 Origination Direct from Producers

The soybean purchase contracts used by the companies include a clause specifying that the soybean delivered must not come from Amazon Biome areas deforested after July 2006.

Each vehicle arriving at the reception point was accompanied by an invoice with the producer's name, income tax number and the name of the farm. The acquiring company used its systems to verify the rural producer's status, not authorizing receipt of soybeans from areas deforested after declaration of the Moratorium. The cases outlined in Item 4.1, confirmed pre-purchases, were the only exceptions.

4.3 Origination in the Secondary Market

Where purchases are made through third parties, a declaration from the suppliers or a contractual clause is required to the effect that the soybeans being purchased do not come from Amazon Biome areas deforested after July 2006.

An audit of the process will verify whether the suppliers delivered this declaration or the purchasing contracts have specific clause. The industry and trading companies may buy from producers that deposit the soybeans in general warehouses, except from those producers who do not respect the Moratorium's criteria. Should any irregularity be noted in the declarations, the companies participating in the Moratorium will no longer deal with that trader.

5. Vulnerabilities in the Monitoring System

Companies participating in the Moratorium do not have the powers of the police force, but they strove to comply with their commitments. There is no perfect system for controlling the physical movement of commodities traded in bulk and stored without identity preservation.

Control was much more effective in operations with greater access to information and documentation, such as those cases where production and origination were pre-financed directly with the rural producer. Control was more difficult in spot-market purchases and was further aggravated by the fact that some of the producers had a single state inscription that allowed them to trade production from several farms.

One of the main bottlenecks was identification of the property's owner and lessee. When this information was not available in the state registration, it had to be obtained from third parties and verified to avoid possible errors and their consequences. Identification of the parties involved was necessary for proper monitoring.

As it is a homogenous product, part of the production traded through third parties could have been diverted, and it is impractical to control the flow of transport and storage of the production.

Purchasers cannot demand that traders supply information about their suppliers. The physical tracking of the movement of large volumes of the product without identity preservation would be very costly and extremely complex to put into operation.

It is estimated that ABIOVE and ANEC members move about 90% of soybean production, and it is therefore opportune to emphasize that the Moratorium commitment does not cover all domestic and international purchasers. In addition, Brazilian legislation allows producers to export their production directly or through co-ops.

6. Audit

At the end of the season, ABIOVE and ANEC members will give external audit company free access to their soybean purchase documents and to their operational control systems. This audit company is committed to preserving the confidentiality of such information.

The auditor will validate compliance with the Moratorium, i.e., verify that the companies did not in fact receive soybeans from areas deforested after July 2006 and that non-productive suppliers (traders, co-ops, etc.) delivered the declaration described in Item 4.3.

In addition, the audit company will be given access to the companies rendering monitoring services, which will present the evidence collected during their field visits and demonstrate their operational procedures. The civil society organizations, which are members of the GTS, were authorized to accompany the field visits and flyovers made by the contracted company.