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AGRIBUSINESS, GREENHOUSE GASES AND CARBON SEQUESTRATION

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There is a consensus among most scientists, which humans and the natural world are on a collision course today. The super human activities accelerated development comes inflicting severe and often irreversible damage to the environment and to natural resources are finite and increasingly in smaller amounts. To continue this process, many of our current practice of using these resources will put at serious risk the future that we wish for human society and nature.

The emission of greenhouse gases caused by agricultural and industrial production processes and by automotive vehicles has generated a buildup of carbon dioxide (CO2) in the Atmosphere, which has been considered as the main source from global warming. Of the total of approximately eight billion tons of carbon per year, generated by human action, more or less half the difference in the atmosphere is absorbed through biochemical cycles and biological processes, and the oceans, via the largest of algae, flouts carbon.

The progressive buildup of carbon dioxide and other gases prevents the dissipation of heat from the sun's rays impinging on the Earth's surface. This phenomenon is known as "greenhouse effect" and, originally is responsible for maintaining the temperature at the surface of our planet, without which the temperature could reach -18° c. However, this excess gases to increase the temperature of the planet, causes a set of climate disruption. For example, the rise in temperature could cause the melting of glaciers and ice caps and, as a consequence, the raising of the standard of living of the oceans. Thus, puts at serious risk, in the future, the way of life of the populations and of seaside towns.

Be that as it may, it became imperative to extend the ability to absorb carbon and other greenhouse gases, as well as reduce their issue. This can be achieved by means of their retention in soils by crops, forests, in reducing the emission of methane gas for livestock and also by the reduction of industrial emissions in developed countries. The Kyoto Protocol, signed by hundreds of countries, with the regrettable absence of the United States, enshrines the concept "carbon sequestration" and sets as goal for the period 2008/2012, a 5% reduction in emission levels from indexes observed in 1990.

In this particular case of global warming, there's certain turmoil and some misinformation. There is a product resulting from the high scientific knowledge, but that strong forceful currents of economic interests, uses sophistry aimed at the mega business transactions involving a profitable and ambitious carbon market, hurting the discussions, make it impossible for a more decisive stance on the part of governments of developed countries, as well as in emerging said.

If on one hand the amount of resources involved in the environmental services market, where carbon credits play a dominant role, and are estimated to be \$ 800 billion in 2012; on the other hand decrease economic growth in developing countries and who waited centuries to enjoy this privilege is asking too much. Most of their rulers do not waive any percentage in terms of advancement of its GDP.

In addition, the rich countries, considered the major villains and causing the terrifying phenomenon, know that eliminate the emission of greenhouse gases requires a radical change in their energy matrixes. As this factor should make enormously the energy value, governments are unable to enter into commitments liable to sacrifice its citizens who suffer the consequences of a recent serious economic crisis, where the State had to shell out large amounts of resources to save their economies.

In developing countries, agribusiness practiced in areas that need to be cleared, and those whose production is in rudimentary technological bases have major holdings in the emission of greenhouse gases (GHGs) through the burning of biomass, by the soil for planting, revolved by rice cultivation in flooded land, by fermentation of livestock waste and by enteric fermentation in ruminants. These production systems are not consistent with the environmental balance and must be exchanged for systems that reduce the emission of GHGS by not using deforestation, i.e. using deforested areas; increase carbon storage and sequestration and avoid emissions, in this case, with the correct deployment of the legal reserve of the production area.

The soil is one of the largest carbon storage of nature. There is three times more carbon fixed in the soil that in the Atmosphere. Whenever you move the soil for your preparation for the cultivation, a CO2 release process occurs. The other way around, when it cultivates and covered soil, CO2 absorption takes place and great amount of carbon is retained in plants and in the soil on account of photosynthesis.

The fewer we mess the soil up cultivation processes; smaller quantity of CO2 is released into the Atmosphere. Why the zero tillage, a system that preaches minimal soil cultivation, is so beneficial to the environment. Studies estimate that the 26 million hectares are represented by cultures that practice tillage, in Brazil, are responsible for the kidnapping of 13 million tones of CO2 per year. Other agricultural process that acts beneficially, and for longer period, crop-livestock integration with forest and agro forestry systems.

As regards livestock the largest CH4 emission sources, are represented by the fermentation of waste (17%) and enteric fermentation in ruminant (16%). Thus, to reduce the environmental impacts caused by these emissions is important to the intensification of pastureland and degraded pasture recovery, in addition to genetic improvement actions, such as the development of animals with better feed conversion, because the more weight the animal gains with less intake of food and in the shortest time, more efficient is the production from the point of view of methane.

Studies conducted in Amazon with the collaboration of Embrapa Agrobiologia show that well managed pastures can remain productive for several years and provide carbon stocks in soil greater than those of native forests. While in the forest the amount of carbon can vary from 80 to 120 tones/ha, in consortium of *braquiária* with *estilosante* grazing, 162 tons until reaches a depth meter of soil.

Therefore, it can be said that the carbon sequestration by livestock is accomplished through interconnected actions and which relate to the continuous growth of the pasture, and consequently of its root system, responsible for the buildup of carbon in the soil.

The anthropized area (the one with primary vegetation changed by man) in the Brazilian Amazon already exceeds the surface of France, 543,965 km², representing more than 600 million hectares the region needs to promote their sustainable development from that area that can no longer be seen as unproductive. So take advantage of it is not clear, i.e. less emission of CO2 by burning biomass, and with the use of new technologies in production processes will have less GHG emission.

By hand cost-effective carbon market is a very important business alternative to Amazon and, particularly, the State of Pará will have much to gain. According to the Instituto de Desenvolvimento Florestal do Estado do Pará (IDEFLOR), environmental liabilities in Pará is approximately 15% of its territory, somewhere around 18,487,770 hectares.

The recovery of this person with perennial plants and agricultural crops, when recognized, in certifying bodies, such as the Clean Development Mechanism (CDM) may in the future, considering the rate of carbon sequestration, with an overall average of 15 tones of CO2, and a conservative rate of \$ 10.00 (ten dollars) on Emission Reduction certificates (carbon credits), generate an amount of \$ 2.7 billion/year.

Brazilian society and particularly the Amazon society must meet increasingly this reality, so as to provide the political endorsement for these transformations in agribusiness if so far, the economy and the environment are "walking" convergent manner, resulting in sustainable economic development.