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Cattle and the Amazon

Brazil has the second biggest herd of cattle in the world, with 160 million head, and the biggest commercial herd on the planet. Thus, we raise the following question: are these data worth the negative environmental impact caused by this activity? We obviously need to supply the population's demand for animal protein, but...?

By Rogério Martins Maurício * *& José Renato de Castro César* **

Tropical forests are considered to be the planet's most complex ecological regions. They are responsible for the supply of rare raw materials, products and services that have been used by humanity for more than 500 years. Before the Europeans arrived, the Brazilian indigenous peoples had already mastered the agroforest systems with full technical and technological knowledge of their proper management. A number of anthropologists see the Brazilian indigenous tribes as the only example of a civilization capable of cultivating a wide variety of plants per unit of area under sustainable management; in other words, they were and, in certain respects, still are the great maintainers of tropical biodiversity.

The resources of this complex biome have been exploited in an unsustainable way ever since the European colonizers set foot in America . First, the forests are "dominated" by the extraction of fine woods and rare spices. The best trees are cut, and fire is used to clear the land for the establishment of crop fields or pastures. However, the biggest difference perceived between the Amazon and the other highly populated regions of Brazil , in terms of human occupation, is found in the ways energy is used, provided, in the latter, by the indiscriminate use of charcoal, which has begun to threaten the Amazonian equatorial forest region and cause dramatic desertification.

The environmental degradation of the northeastern, southern, and southeastern regions of Brazil allows us to affirm that cattle raising is one of the primary degrading agents of our national forests. We have 105 million hectares of pastures of which 50% is degraded or in the process of degradation. The implantation of agriculture goes through the selling of firewood or charcoal extracted from the forests, the depletion of the soil by agricultural activity, and its later use to grow a single type of graminaceous forages – braquiária (*Braquiaria decumbens*) or colonião (*Panicum maximun*) for pastures.

Some areas of forest are turned into pastures immediately after being deforested. The low nutrient level of tropical soil, coupled its rapid depletion, creates pastures with low nutritive value which, when associated with the improper management of cattle raising, are the limiting factors of rural productivity.

When comparing the process of settlement of the Amazon and the historical socio-technical pattern adopted throughout Brazil, it can be clearly seen that the establishment of cattle raising immediately after the cutting, burning, and parceling of the forests favors the imbalance of the local natural biome, in which the recycling of nutrients was originally conducted by living creatures inhabiting the soil. The national rural practice is old-fashioned and, in the Amazon, it causes rapid desertification, since the Amazon soils are sedimentary, shallow, and poor, easily weathered when the forest cover is removed. In other Brazilian regions, desertification occurs more slowly because the soils are mostly composed of igneous and metamorphic rocks, less subject to weathering, less poor, and deeper.

The settlement of the Amazon by adopting the agricultural and cattle raising patterns brought by the immigrants from the southeastern, southern, and northeastern regions of Brazil , as well as the banal tropicalization of techniques not adapted to the Brazilian biomes, spreads severe environmental and economic problems. This mentality, which nowadays inserts cattle raising in the north of Brazil without any criteria, is medieval, being effective for only the short term, and inevitably reduces the economic and educational standards.

We, the Brazilian people, have a collective liability of approximately 50 million hectares of soil that have been impoverished by cattle raising, the solution to which is the adoption of sustainable agroforest and cattle raising practices. Such practices, based on the tree-grass-animal and technique-technology-task triads, will allow a more holistic view of the system that values the immense tropical biodiversity and provides more dignified survival conditions to the human race. Such procedures should " *be committed to producing more food for the current population without endangering the food production capacity of future generations* " (sic, FAO), placing the ordinary man at the center of scientific speculation about well-being.

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