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**POTENCIALITIES AND THREATS BY BUFFALOES ON THE AMAZON FLOODPLAIN****MARTÍNEZ, G. B.**

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**ABSTRACT**

Despite all its potentialities, the buffaloes in this region has been suffering pressure from groups of opposing interests. On one side, there are the cattle breeders who believe in the productive potentialities and sanitary and nourishing endurance of the animals. On the other side, there are the environmentalists who relate the damages on the floodplain ecosystem to the raising of buffaloes in the region. Farmers maintain the buffaloes on the floodplain during times of low water. But, when rising waters become too deep, floodplain ranchers have three options. They can confine cattle to floating platforms (called: *marombas*); they can pen them in small upland corrals (known locally as *caïçaras*) adjacent to the floodplains; or they can transfer them to upland pastures. The excessive animal load on the fragile ecosystem like the floodplains and under adverse conditions, brings mechanical degradation to the soil by invaders that settle on these areas and aggressively compete with the pastures and by compactation as a result the animal pressure on the soil. The conflicts between the cattle breeding and other activities developed by the floodplain inhabitants has created controversy about the viability of this activity in the floodplain areas and has put at risk an important part of the regional economy. However, Embrapa Amazon Eastern – Brazilian Agricultural Research Organization, Procuradoria da República (Republic Procuracy) in the Santarém municipality and IBAMA have been monitoring the use of the floodplain by the cattle breeding, especially buffaloes. They have been visiting communities, real detection of problems, discussion of promising alternatives, suggestions for animal management and helping with some decisions about how to better find solutions to this dilemma. The result of this work is the foundation of the “Termo de Ajuste de Conduta” (Behavior Adjustment Term) which regulates the conflict according to the peculiarities that each case demands.

**Key words:** Amazon, buffalo, floodplain, potencialities

**INTRODUCTION**

In Brazil, efficient buffaloes performance in hot and humid regions in comparison with other domestic animals stood up the buffalo like an economical interest to the region. Some studies indicate that buffaloes have a good meat and milk production and draft power capacity. Nevertheless, when the buffaloes are created in floodplain areas, without an adequate management, it creates conflicts with other economical activities because the cattle breeding is extensive and it faces inefficient ways of enclosing the animals. It's worth pointing out that the floodplain is an unstable soil, of recent origin which its formation is due to a sedimentation process of suspended particles, brought from other regions by the muddy water form the rivers and this process persists with great intensity (1). In this process, the soil is renewed annually in a cycle of overflow and low water of the amazon river. The floodplain has a tendency of elevating the level of the soil and, at the same time, reducing the annual flood period. The floodplain soil is made up of an area with a more elevated topographic level that goes alongside the river, the “restinga” (sandbank) and it is where the “matas ciliares” (river border forest) concentrate and goes on in inclination; and the “low land” areas which are covered by floodable “natural fields”, made up of excellent pastures (2). The two kinds of environment are inundable during a certain period of the year. The “igapó” (swamp land) is a more stable and ancient area, it was created by erosion rather than sedimentation (2). Farmers maintain the buffaloes on the floodplain during times of low water. But, when rising waters become too deep, floodplain ranchers have three options. They can confine cattle to floating platforms.

(called: *marombas*); they can pen them in small upland corrals (known locally as *caiçaras*) adjacent to the floodplains; or they can transfer them to upland pastures. The biggest problem is that most of the cattle farmers have increased their herd over a long period of time and they have maintained the same kind of breeding, which puts an excessive animal load to the soil. Besides that, those farmers keep their animals on floodplains during the overflow season under adverse conditions to the animal and to the ecosystem. Due to the fact that cattle breeding is a very important economical segment for these areas, this management has created great conflicts among the ranchers, especially those who develop other activities like fishing and agriculture. The cattle breeder, no matter the number of animals he has, is considered economically superior when compared to the agriculturist and the fisherman because cattle represents “cash” at any time. In some cases, the conflicts have happened so intensely that some agriculturists, aggrieved by the animal invasions in their areas, attack the animals with machetes cutting them deeply.

## **MATERIAL AND METHODS**

The conflicts between the cattle breeding and the other activities developed by the floodplain ranchers has created controversies about the viability of this activity in the floodplain areas and can put at risk an important segment of the regional economy. However, since December 1997, the Embrapa - Brazilian Agricultural Research Organization, Procuradoria da Republica (Republic Procuracy) in the municipality of Santarém, and sometimes Ibama have started a program, still rather strict, of monitoring the use of floodplain by cattle breeding, mainly buffaloes breeding. In its initial phase, we came to the conclusion that those conflicts were interpersonal because they were ancient and unsolved problems. Through visiting the communities, real detection of problems, discussions about the promising alternatives, suggestions for animal management and decisions about how to better solve this dilemma, the “Termo de Ajuste de Conduta” (Behavior Adjustment Term)” regulation of the complementary Law number 75-93, which has the intention of taking the parts to a conciliation. This document was emitted by the “Procuradoria da Republica” (Republic Procuracy) of the municipality of Santarém and is based on the technical report emitted by Embrapa in which the community dwellers have a commitment to fully accomplish it. Through this mechanism, the group has obtained excellent results and it has been leading them to a perspective of a sustainable use of this ecosystem, interacting different activities in an integrated system of generating profit.

## **RESULTS AND DISCUSSION**

The suggestions of how to correctly manage the great animals in the floodplains of this region are not similar to other areas, though some basic action must be taken by the farmers as a way to avoid more conflicts in the rural area. At this point, a laborious work must be done in order to change an old regional culture in which “nature” creates the animals. It is indeed necessary to create a sequence of explanations about animal management and to abolish certain paradigms on raising great animals, especially buffaloes in floodplain areas. The result of it will bring serenity/peace to create a multi-purpose system where different activities will be able to share the same ecosystem. Nowadays, more than 20 communities have been receiving assistance in the western Pará region – Brazil under the regulations of the “Termo de Ajuste de Conduta” (Behavior Adjustment Term)”. Its main directions are based on taking the animals out of the floodplains in the annual overflow season of the amazon river and its affluents, this action should be taken before the level of the river water covers the “restingas” (sandbanks). This way, the recovery of native/cultivated pasture is guaranteed after the natural aggression occurred by the rising of the river waters. The expected time for this to happen can be from February through April. The return of the animals to the floodplains should only occur when the water of the amazon river and its affluents comes down to a level where it can allow the natural recovery of the native/cultivated pasture after the overflow season and hard soil with the intention of better moving the animals. The expected time for this action to be taken should be from July through August. Besides that, it is very important, as a way to protect the natural environments, that the buffaloes be kept in corrals or fenced during the night, especially

when the “fields” are flooded and it exerts more pressure to the “restingas” (sandbanks). This way, it makes the control of moving the animals possible and it reduces the invasion of animals to the neighboring lots. Finally, an accomplishment to obtain results in the short run is to recover and maintain degraded areas but the excessive trampling. This recovery should be gradual and through the planting of “mojuí” grazing (*Brachiaria mutica*), especially in the “restingas” (sandbanks) to provide feed for the herd and retention of the animals in the uplands. The relation for the recovery of this area must be at least one ¼ for hectare for every 5 animals a year. In short, nowadays the farmers have some orientations of how to proceed to keep on benefiting from the floodplains without damaging the other activities. A very important item of the basic suggestions is the recovery of areas worn out by the inadequate use of cattle raising, however, very few have been acting as demanded. In the short run, this effects may not be serious but in the medium and long run, the situation may be critical because of the lack of pasture to the animals, which will create new invasions to the surrounding areas. Thus, Within the first years of the agreement, it is vital to have technical support to control the “in and out” of animal in this areas at adequate times, as well as the demand and awareness about the importance of recovering of misused pastures. In the assessment, still preliminary, about the intervention of official organizations in agreements among community dwellers, it is important to point out that it was better than we expected. The way people showed they were satisfied can be seen on comments like: “Let’s organize ourselves”, “ the buffalo law is coming” or “after the agreement, the fish are coming back, someone has caught 60 “tucunarés” fish in one day!”. What really matters, besides those comments, is that a group of entities believing in this experience, has joined Embrapa - Brazilian Agricultural Research Organizatio and “Procuradoria da Republica” (Republic Procuracy) of the municipality of Santarém to act in an integrated and determined way, organizing actions to solve the problems in a polite way not only for the community with the disharmony but also for the regions surrounded by the problems. Because of the positive results obtained by this community agreements the entities that joined Embrapa - Brazilian Agricultural Research Organizatio were: “Colônia de Pescadores Z-20” (Fishers Associative), IPAM/Projeto Várzea – (Organization No Governmental) and SEMAB - Agricultural Municipality Secretary of Santarém-Pará State.

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