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**PLANNING, MANAGEMENT AND TECHNOLOGY ARE INDISPENSABLE TO  
MODERNIZE LIVESTOCK**

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In the years 1980, the Brazilian cattle business went on to suffer a stigma, at international level, being the activity liable by the increasing deforestation in the Amazon. Disclose that the each burger with beef produced in this region corresponded to the overthrow of a tree. This stigma must be viewed in two ways. The rancher needs to understand that the world population want quality meat and no environmental impact. The consumer – national and international – must understand that the producer has to be profitability to maintain in the field. So, the solution of the "impasse" shall be through a livestock production bases, and its demonstration is made with scientific data.

Until 2050, the global demand for food must increase 70% significant, especially in relation to animal protein sources, according to the UN (United Nations). Although the pace of population growth should slow down compared to previous periods, the increase of two billion people in the world, totaling nine billion, associated with the projection of increased income in some developing countries, tend to maintain high consumption.

Only beef, the prospect is that the Chinese raise its imports, until 2020, for a volume equivalent to 32% of its consumption – currently, import 27%. This is because protein intake increases on pace faster than the country can produce. For the same period, it is estimated that more than 200 million Chinese will rise of social class to the middle class. This is the size of the Brazilian population.

According to the International Meat Secretariat (IMS) to increase food production with environmental sustainability there is urgent need for investment in

productivity. Calculates the IMS that you will need to raise productivity in the world average of 1% per year for agriculture and 1.4% in meat production (cattle and swine). However, many countries are already on the edge of productive border for some time.

In this context, the demand for meat is within reach of Brazil, which is one of the few countries in the world able to supply these markets in quantity. Therefore, the future prospects for livestock are promising. She will walk in ascending line, since the chain if you organize yourself and do your Government wants to do its part. But it is advisable to register, that in Brazil the technological level of livestock are still short of adopted on agricultural production. This is because the pace of technology adoption in livestock is slow, for its own characteristics; Even so, it has intensified and tends to accelerate in the coming years.

According to Embrapa, most of the land used in Brazilian agriculture is busy with pastures. Nearly 180 million hectares, more than half is going through some stage of degradation. Of this total, only 10% of the Brazilian grasslands adopt less impactful pastoralist systems such as fallow, rotations and crop-livestock-forest integration.

Less impactful systems increase the supportability – amount of animal per hectare-increase productivity, reduce greenhouse gas emissions, avoiding the formation of grazing in forest areas, improve or renew pasture, integrate with agricultural and forestry crops, make animal ambience, and have a new management. Is no small feat for an activity of the early colonization of the country, known for extensive production system, but it's still too far away to see a herd of cattle with more than 200 million head, and present in more than 90% of the municipalities of Brazil.

Instead of 10 million tons of meat per year, Brazil could be producing twice as much, to retire more areas in production. Embrapa's studies show that the industry has evolved much since the 1970. With the flock of today and the productivity of that time, would have to be added over 525 million hectares to reach the current production. Plus, the price of meat, which today is 30% lower than in the years 70, wouldn't be occurring. And more importantly, it is possible to move much more, has technology for such.

How to change? In terms of philosophy of the enterprise's right to think big, start small and grow fast. In practical terms, the first change must be cultural. The producer needs to recognize that, if you keep doing what you've always done, will have the result that always had, namely, falling productivity, and embargoes. Here comes a provocative question: what is the difference between a farm "touched" and a

managed? The difference is that the second you know exactly where you're going and the first does not. The difference is in the lack of planning, inadequate use of soil and on extensive livestock pressure for new areas. This change must include the planning, management and use of technology.

This is because the new Forest Code practically banned the opening of new agricultural frontiers in Brazil. If it's right or wrong, the future generations will judge. In function of this impoundment, that legal contention, Brazilian farmers increased productivity-increased production by cultivating the same area. On the other hand, the costs go up forever and the price of the final product drops per unit produced. The solution is, too, the increase in productivity per area. Believing that these two motivators are sufficient to cause a change of habits, remains the challenge of producing rationally, without waste of resources. Therefore, the first step is planning.

As the rancher should plan its activity? Must enter identical practices Brazilian grain producers. On agricultural activity, planning, is a key word. Before the end of each harvest of a crop, the producer of grain crop following program already doing the quoting and the advance purchase of seeds, pesticides, herbicides, and fertilizers, corrective storing good part of these inputs, assessing the condition of machinery and implements (maintenance and review), as well as the need for labor, among other actions. All this based on numbers from information with economic impact, and competent consultants.

In planning the big difference between agricultural activities and most other activities in the field, the variables involved in production processes are considerably less controllable; so the difficulty and challenges are much greater. The solution and, therefore, the path for the practical applicability of theoretical knowledge and experienced in a rural enterprise, is in the process of searching the complex responses that really explain the causes of such failures. That the producer should not do it alone.

In animal husbandry, as seen in agriculture, planning must contemplate a macro vision of the activity, and be done too, with specific technical assistance for the segments involving the activity: pasture, herd, production systems, infrastructure, logistics, marketing, management, accounting methods, labor legislation agrarian and environmental, geo-referencing, animal ambience. This cost should not be seen as an expense, but rather as an investment.

This is because the producer can't dominate all these segments, as well as, control the market, but can and need to improve their productive indexes and manage

costs to maximize gains. Example, the extensive creation system ensures only 3 to 6 @/ha/ano, leaving room for very little gain or negative. Thus, it is essential to reduce the age of slaughter, raise the capacity for grazing area and produce more meat per animal, as well as increase the speed on the capital.

Important point to start the modernization is in a new model of management of this activity. This is because the origin of your delay is still low productivity associated with high costs. The administration, backed by good planning, should be more professional as possible, since the low productivity associated with high costs, a lot of them (that do not relate to the ox), as administrative costs, swollen payroll, spending on infrastructure, lack of tax strategy, among others, all contribute to the decrease of the profitability of the cattle industry. On the farm, 75% of the staff have to be directly connected to the end activity, namely, the production of meat.

The best management is shared, and this has to get to the livestock by increasingly complex and expert technical activity. In modern management the producer needs to be more a information manager than someone who decides everything. The engine of transformation are the people, and must take place from top to bottom, always from the owner or owner. The key indicator to guide management is the performance of property in manning's pasture and weight gain in cattle, or milk production per cow, in dairy farming.

The quality of management in a company is critical to the success of the enterprise. Is managerial sphere that is organized and harmonizes all efforts towards the results. The three administrative levels – strategic, managerial and operational-encompass all the ordering of human activity in a company. In short, the country estate has to be transformed into rural company.

The challenges are many, then, the plan should indicate where to start. The recovery of degraded pastures should have priority in planning. Feed planning must from the grasses adapted to the conditions of the farm, from his supportability, and management. When this balance is broken leads to degradation of the pasture. The solution of this problem should start by the gradual reform of this pasture (8% to 15% of the grazing areas per year), directly or through integration. If you can deploy or rent areas for agriculture in the degraded pastures is already a good start for the modernization. According to the researcher from Embrapa Amazônia Oriental, Moacyr Bernardino Dias-Son: *"it is necessary to break old paradigms, such as the belief that the grass is not an agricultural culture and can be managed by the laws of nature"*.

So, that the Brazilian herd can raise productivity is essential to advance in genetic improvement. This improvement should begin on the property with an indication of the main parameters and indicators affected by breeding and genetic improvement, and for the selection of breeding stock animals. Also the assessment of technological processes as: breeding, artificial insemination, artificial insemination for fixed time, embryo transfer, in vitro fertilization and racial crossover. This is because reproductive indexes are the thermometer of the cattle industry, because the genetic orientation can prioritize the production (meat or milk) with consequences both positive or negative in the reproduction. Sanity, nutrition and management are essential in the expression of the genetic characteristics and, consequently, in the reproduction of cattle. All this work should be done by genetic elaborate bookkeeping.

In Brazil, a small part of the properties of beef cattle has proven genetics. In addition to the economic advantages, genetic zebus properties generate 50% more social benefits and are 41% more efficient in the use of natural resources when compared to the typical properties. Is the survey made by the Cepea (Center for advanced studies in applied economics), the Esalq/USP.

Translating this information on indicators has that a revolution is taking place in Brazilian cattle. She left 1 AU/ha (an animal unit per hectare) to 4 UAs/ha. According to the researcher from Embrapa beef cattle, Ademir Hugo Zimmer: *"between the years of 1970 and 2010, meat production increased by 440% and the herd grew 215 percent, while the area of pasture rose just 23% over the same period"*

In financial terms, a livestock who earns very little, less than R\$ 200/ha/year can reach R\$ 1,200/ha/year. However, the focus is not profit/ha, but gain on the value of the herd, which must be at least 15%, i.e. a flock of 1000 heads, R\$ 1250 million worth, the producer needs to win R\$ 187,500 because the most liquid asset of livestock is the animal. This is possible with rotating stock-animals discarded – from the increased weight gain of animals.

To evaluate this new standard of livestock, the Federação de Agricultura e Pecuária de Mato Grosso (Fermato), has selected seven farms as "references" in beef cattle in the State. In partnership with the Instituto Mato-Grossense de Economia Agropecuária (Imea) assessed indicators of production, revenue, cost, profitability and efficiency, among others, in the period from 18 September to 27 November 2015.

The winner was the Boqueirão farm in the municipality of Santo Antônio do Rio Leverger. This property with 2600 hectares makes the crop-livestock-forest integration,

their pastures have a predominance of grass andropogon, and braquiárias marandu and xaraés. Invests 6% of spending on fertilization of pasture. Slaughter animals with maximum age of 24 months and final weight of 600 kg (male) and 430 kg (female) in full cycle on pasture and termination at semi confinement. Has average gain of weight of 300 g/animal/day in dry months and 1,350 g/animal/day average throughout the year. This weight gain, too, has to do with advances in genetic improvement of cattle. The recipe today is five times greater than twenty years ago, when it adopted the extensive system of production.

Planning, management and use of technologies in livestock change the extensive production system, decreasing the pressure by the occupation of new areas, improving efficiency, offers a wide range of opportunities for mitigating greenhouse gas emissions at the same time the decrease in emissions of these gases, and contributing to the implementation of the Forest Code, protecting water supplies and biodiversity.

Thanks to the technological package – which allowed, among other achievements, the improvement of pastures – between 2004 and 2014 there was an average increase of 50.3 kg to 62.8 kg per hectare housing in Brazil, according to the IBGE. Although the area of pastures has decreased 10 million hectares and the herd has remained stable, was produced a 13% higher volume of meat. The potential is at least ten times larger, and you have to put it.

Because Brazil, with a bovine herd of 212.3 million in 2014, according to the IBGE, has productivity less than the United States, which, in 2014, were 89.8 million head, according to the Agriculture Department. According to the Institute of Animal Science, the Department of Agriculture and Food Supply of São Paulo, the average capacity of 1.1 AU/ha and the fact that, on average, hits the ox over 36 months with 16 to 17 @ demonstrate the enormous space that the Brazilian cattle business has to advance, greatly enhancing their productivity.

Livestock is a millennial activity worldwide, and, in Brazil, there are records from 1534, for almost 500 years. In recent years, livestock comes very advancing. A little over ten years, heard little or nothing about Rural Environmental Record, cloning, biotechnology applied, low carbon, livestock and drones, among other innovations.

Today has opportunities to modernize the Brazilian livestock, as the ABC Plan (Low Carbon Agriculture), with its degraded pasture recovery objectives and the iLPF (crop-livestock-forest integration), besides professionals in agricultural sciences, competent and knowledgeable. At the same time, there is a lot of work ahead of us to

put on the field all that innovation. Incorporating this work the economic and environmental aspects, inseparable in modern animal husbandry; Hence the need for synergy between planning, management and technology to overcome the challenges surrounding the Brazilian cattle business.

The Agência Paulista de Tecnologia dos Agronegócios (APTA) launched the 777 ox system – 7 @ gain in each phase of the production cycle of veal, creates, re-creates and fattening – in which the Bull is down with @ 21 in 24 months. This is made possible with support from the "Tools" above.

The Getúlio Vargas Foundation analyzed the economic result of nine segments of the livestock, and pointed out that the thread (full cycle, with increasing application of technology) presented the best result in 2015, with average return of 8.79 percent. Was the only segment, between the analyzed, to stay above the yield of 7.94 percent savings. The other showed profitability that ranged in descending order between 6.19% to -7.61%.

This demonstrates that as a new standard of cattle ranching expands by nationwide, the activity passes to propitiate sustainable economic development with greater wealth generation and distribution of income for the majority of Brazilian municipalities. To this end, it is necessary that the rancher let to be creator of ox to cultivate grass and produce meat and milk, take care of the environment, promote functionality and management responsibility to employees, and improve animal ambience. The livestock in the current century is a complex activity, therefore, need of professionalization.

Planning, management and technology turn the livestock to get the certificate of Good Agricultural Practices, of Embrapa. Currently, more than 200 properties are listed, most are in the process of fitness for certification. In the Amazon, two properties have obtained this certificate, in Pará and Rondônia.