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SUSTAINABLE ECONOMIC DEVELOPMENT: STILL A UTOPIAN OPTION, OR AN URGENT NEED?

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In 2013 two alerts made by the international scientific community, related to the sustainability of the planet Earth are worrisome. The first refers to the amount of carbon dioxide CO^2 in the atmosphere. Over 400 parts per million (ppm), for the first time in human history, indicating a record concentration of greenhouse gases. Scientists believe that the CO^2 reached the current levels last seen more than ten million years ago, in the middle of the Miocene Period. And on that occasion it took nature hundreds of millions of years to change the concentrations of CO^2 through natural processes such as natural burial of carbon or volcanic eruptions.

According to climatologists, this symbolic limit Americans should serve as an alert for an action that begins to reverse the damage caused to the environment by human activities and the increasingly intensive use of fossil fuels.

Although there are, among scientists, controversies about this theme, the Earth has never seen these levels of CO^2 in millions of years, long before the appearance of man, said Bob Ward, policy and Communications Director at the Grantham Research Institute on Climate Change and Environment at the School of Economics and Political Science from London. He said: "we are creating a climate in which prehistoric human societies will face enormous risks and potentially catastrophic". And continues: "only urgently reducing global

emissions will be able to reduce carbon dioxide levels and avoid the consequences of rewinding the climate clock".

The problem that arises is that, though living things can adapt to slow changes that occur over tens of millions of years, there is no reason to believe that they and we can adapt to changes that occur a million years faster than natural rates of change. This is a recurrent concern in the media. However, that's not how it processes the genetic adaptation. The great genetic variability, due to mutations, is available in the human population since the dawn of time, and remains at low levels of frequency. The environmental change occur these Adaptive modifications, which are beneficial, increase their frequency, and every generation, are incorporated into new variants increasingly adapted to a total limit adaptation. However, two aspects are required and must be studied and monitored: the speed of climate change; and the limit of adjustment for genetic variability.

It is important to point out that mankind has exhausted the budget of nature to the year 2013, as early as August. The information is from the Global Footprint Network, Ecological (GFN), and international institution partner of Word Wide Fund for Nature (WWF). The data collected by GFN indicate that, in less than eight months, mankind has used all what nature can regenerate during a year. As you increase our consumption grows ecological debt, meaning the reduction of forests, loss of biodiversity, fish stocks collapse, food shortages, declining soil productivity and accumulation of carbon dioxide in the atmosphere. All this not only overloads the recoverability, and maintenance of the environment, but also undermines our own economy.

So, accelerates more and more ecological footprint of humanity. She is the amount of biologically productive land and water required to supply a population with renewable resources that it uses, and to absorb or eliminate the waste from the use of such resources. Is an average of environmental impact of populations in different countries. Today, more than 80% of the world's population lives in countries that use more than their own ecosystems can renew. These countries "ecological debtors" exhausted their own ecological resources or obtain from other places, countries and areas.

The accounting of Ecological Footprint made by GFN, for 2012, demonstrates that the pace at which humanity uses ecological services and resources today we would need one and a half Earth to renew them. Continuing at this rate, we will need two planets before reaching the half-century.

The Latin America and, more specifically, South America is in a unique position in the world context, since their ecological reserves still outweigh its ecological footprint in most of

that region, i.e. are still "ecological creditors". However, this pattern is changing and now, more than ever, the South American countries need to really understand the production and consumption of natural resources to remain competitive in the new economy.

According to Evaristo Martins, 2007, before the discovery, the Brazil held 9.8% of 64 million square kilometers of forests existing in the world at the time. The struggle for survival and the desire for progress have led humanity to the use of this feature and, today, more than 75% of the world's forests were cut down. Europe, except Russia, held 7% of the planet's forests, at the moment only has 0.1%. Africa was holds almost 11%, now has 3.4%. Asia was coined with 23.6%, 7.5% and today continues clearing. South America, due to the delay in its economic development, held 18.2% of forest reserves and today stands out with 41.4%. Responsible for these forest remnants is the Brazilian Amazon.

In 1830, Brazil had cut down less than 0.5% of its 6.27 million km² of national forests. According to Miranda, the Brazilian deforestation is a 20TH century phenomenon. Brazilian expansion on "March West" decimated with the remnants of the Atlantic forest in Minas Gerais and São Paulo and the entire forest of Pines on the Paraná was traded, in political agreements with British and American businessmen.

Even so, Brazil is still "ecological creditor" and, from 2010, has been conducting pioneering work in partnership with the GFN, the city of Campo Grande (MS) and local partners, in calculating the ecological footprint of the capital South-mato-grossense. In 2011, the State of São Paulo also went on to perform similar work.

From utopia to the urgent need for the path is long and tortuous. Goes through changes in personal habits — habits that are engraved in the heart – and the political awareness, recorded on their conscience. This will touch in public managers, whose horizon is always of very short term, the next election. Only the society thinking and wanting long-term policies will force politicians to adopt them.

Brazil's ecological liability is due to three main factors: agriculture; the use of fossil fuels; the treatment of garbage and wastes from human activity. In agriculture there are two dimensions: a) deforestation of new areas for cultivation and b) the emission of greenhouse gases, carbon dioxide and methane from the productive process itself, some of them completely inadequate. Considering that Brazil comes in strong control of staffing deforestation, mainly in the Amazon and emission reduction programs at urban level, the second item is troubling. For this case, the formatters of new technological innovations come proposing the so-called Low-Carbon Farming (ABC), acronym in Portuguese.

Five items that underpin new vision with significant agronomic advances in technological innovations: First, No-Tillage that allows you to protect and improve the soil structure and reduce the emission of carbon dioxide in the soil preparation. The second is the Crop-Livestock-Forest Integration System which, when adjusting three production processes with greater technological level: farming with tillage; livestock with use of cultivars of excellent productivity and animal pastures of high feed conversion, with the cattle created in the shadow of trees; forest with trees planted tolerant to main pests and diseases. This integration enables productive economic and ecological returns.

The third is the Integrated Control of Pests that allows a reduction in the use of agrochemicals with positive effects on the environment. The fourth refers to the Biological Nitrogen Fixation, i.e. plants that by allowing an association with atmospheric Nitrogen fixers microorganisms allow considerably reduce, or even eliminate, the application of this fertilizer. The fifth is the treatment of waste from livestock. In this case, products, technologies and processes developed are offering important contributions in this segment.

Fossil fuels, the country needs to increase its substitution by biofuels, solar and wind power. As for garbage and waste is necessary a firm policy of sanitation, which means investing in works that, in the short term, not promote politicians. For committing them, in addition to the political decision is necessary funding compatible with each of the specifics of these factors. The society needs if awareness and mobilize.

REFERENCE

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