

FOOD SOVEREIGNTY IN BRAZIL – ALTERNATIVES IN PERMACULTURE¹

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Abstract

A sixth of world's population is undernourished, although the Food and Agriculture Organization from United Nations affirms that actual food production could easily feed all. The same occurs in Brazil, one of the larger food producers in the world. Political power is unfortunately visibly subordinated to economic power. That undermines food sovereignty which is the ability of the country and society to decide what to produce and for whom: the organization of agricultural production is dictated not by the demand for food but by the needs of the international market. We consider that the problem remains in the conception of development, centered in economic perspectives and strategies to reach a common welfare and well-being, and which is logically not suitable to man kind needs. The current model of development followed by all capitalistic nations in the world, including Brazil, has its goal on infinite exponential economic growth to reach prosperity. For agricultural production, this model is translated on agribusiness and is announced as the key to eradicate hunger and poverty, which is far scientifically proved to be a fallacy. In this paper we show that such conception, is not suitable to people's needs and instead, build important barriers in succeeding against humanity's challenges. In fact, there are two myths that should be broken in order to stop hunger and to converge efforts to real human well-being and welfare: firstly, the myth that agribusiness is essential for feeding, and secondly, the myth that economic growth brings better life conditions.

1. Introduction

Aiming to liberate men from the hard work in the fields, to increase production, while decreasing costs, prices and land used, the mechanization of agriculture and the introduction of new technologies (such as genetically molested

organisms) were taken, and still are, as a solution for the hunger in the world and as a solution for energy crisis.

A sixth of world's population is undernourished, although the Food and Agriculture Organization from United Nations affirms that actual food production could easily feed all. Why do many people do not have access to the fruits of this development? Our central thesis is related to the fact that all technologies invented, all strategies to set people free from hard, physical work, from hunger, from stress and diseases, it all have failed and we still find whole societies in precarious conditions of life quality.

We consider that the problem remains in the conception of development, centered in economic perspectives and strategies to reach a common welfare and well-being, and which is logically not suitable to man kind needs. The current model of development, is based on infinite exponential economic growth and is announced as a model to be adopted and succeed in order to achieve a better level of life quality, progress and prosperity.

In this work, we explore the machinery of this system in relation to food security and food sovereignty. We analyses Brazilian political choices around the question: the first has been contemplated with great investments in social programs, such as the “Fome Zero”, while the other seems to have a lower priority. What is the difference between putting the political efforts into the food sovereignty or into food security? What does it requires? We will answer to these questions by showing where the environmental degradation, hunger and the economic system meet.

In the one hand, Human Development Index (HDI) rises through the country, increasing from 0.649 in 2000 to 0.699² in 2010. The International Fund for Agricultural Development (IFAD)³ celebrates the reduction of poverty in the sixth world economy in 2011, and thanks its “impressive economic growth” for that.

1 This article was written based on previous research presented at the University of Toulouse, France, on 26th September 2011, as final work for conceding the author' Master's Degree. Title: “Permaculture and Solidarity based Economy – Nova Oikos Project in Brazil”. Thesis Director Dr Geneviève Azam

2 Human Deveopment Report 2010, <http://hdr.undp.org>

3 IFAD - Enabling poor rural people to overcome poverty , November 2011.

Nevertheless, in the other hand, Brazil ranks among the countries with the highest rates of social and economic inequality in the world. We will show that the industrial agricultural model (agribusiness) instead of generating better life conditions, is actually causing more damage than benefits for both environment and society.

In fact, there are two myths that should be broken in order to stop hunger and to converge efforts to real human well-being and welfare: firstly, the myth that agribusiness is essential for feeding, and secondly, the myth that economic growth brings better life conditions.

Since early 1970's, different branches of knowledge have given foresights of the consequences of an exponential and unlimited economic growth in our limited resourced planet, thus building the main arguments of the economic degrowth current. Many discussions and questionings take place about how to improve alternatives and sustainable solutions for food production and the access to it.

The Permaculture movement with its practices and ethics shows up in this context with many examples of sustainable answers. According to Holmgren (2007)⁴ the permaculture is related to *“consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fiber and energy for provision of local needs. People, their buildings and the ways in which they organize themselves are central to permaculture”*. Within a Permaculture system, work is minimized, “wastes” become resources, productivity and yields increase, and environments are restored. Permaculture principles can be applied to any environment, at any scale from dense urban settlements to individual homes, from farms to entire regions.

In order to evolve alternatives for goods consumption and production, based on self-management, solidarity, cooperation and the quest

for autonomy, the permaculture initiatives are in the fields of social and solidarity-based economy (SSE) and are also in the core of the economic degrowth current.

2. Food production in Brazil

In terms of agricultural resources, Brazil is endowed with its area extension (5th country by area and population), diversity of climate and soil, great fresh water reserves and sun shining most part of the year. The country is one of the world largest producers of fruit, grains and meat, it occupies the first places on the world rank production⁵ of oranges, cattle, chicken and horse meat, pig sausages, flour of triticale and oilseeds, green coffee, sisal, wafers, cashew, maté, pineapples, soybeans, Brazil nuts, sugar, cassava, dried whole milk, apple, dried beans, papayas, citrus, rice, eggs, tangerines and mandarins.

In economic terms, agriculture represents 5,4% of Brazilian GDP⁶, and what does it means? Brazilian agricultural production surpassed the self-sufficiency in food and reached an important position on food provision for international demand. In 2009, the president of EMBRAPA (Brazilian Company of Agriculture and Livestock Research) asserted that investments would help ensure that Brazil became the world's leading food exporter by 2025⁷.

Why does the future largest food producer in the world still keeps its people suffering from hunger?

The current model of development followed by all capitalistic nations in the world, including Brazil, has its goal on infinite exponential economic growth to reach prosperity. For agricultural production, this model is translated on agribusiness and is announced as the key to

4 HOLMGREN, David (2007) “Essence of Permaculture – A summary of permaculture concepts and principles” from “Permaculture Principles & Pathways Beyond Sustainability” E-book online: <http://www.holmgren.au> [visited on 20/09/2011]

5 <http://faostat.fao.org>

6 <http://www.fao.org/countries/55528/en/bra/> [visited on 07/05/2012]

7 <http://www.noticiasagricolas.com.br/noticias/agronegocio/4204-embrapa-contribuira-para-que-o-brasil-seja-o-maior-produtor-de-alimentos-do-mundo.html> [visited on 30/04/2012]

eradicate hunger and poverty, which is far scientifically proved to be a fallacy. In this paper we show that such conception of development is not suitable to people's needs and instead, build important barriers in succeeding against humanity's challenges.

We divide actual food and agricultural production in Brazil on family-farming (peasantry) and agribusiness.

2.1. Agribusiness on Brazilian History

Agribusiness or agroindustry refers to the industrial and commercial production chain for agriculture and livestock production. The activity is formed by the junction of agricultural raw material and its industrial processing. Agribusiness is essentially based on the latifundia, monocropping, the use of agrochemicals, biotechnology and mechanized work in order to maximize a large-scale production.

First problem of agribusiness is related to its necessity of agricultural inputs. Agricultural equipment, specialized machinery, genetically modified seeds, and chemicals (insecticides, herbicides, and fungicides, synthetic fertilizers, hormones and other chemical growth agents) are the main agricultural inputs needed on large-scale production. According to reports from the National Industry Union of Agricultural Defense Products (Sindag), over one billion liters of poison are used annually on agriculture in the country. At same time, the World Health Organization predicts an increase of 15% between 2010 and 2020, of deaths causes by diseases related to agrochemicals. In Brazil, diseases related to malnutrition and the use of agrochemicals are the leading cause of death, responsible for 74% of deaths in 2008 (893,900 deaths)⁸.

Another problem is the concentration of land ownership, which origins in Brazil dates back to colonial times. Under pressure of the rising medium capitalistic class, after abolishing slavery,

Dom Pedro II created in 1850, the first Land Law, or the law of property: only those in conditions to buy land from the Royalty would be able to have it. Agriculture is therefore structured around large properties turned to monocropping of economically desired products to foreign markets. Since then, dependence of the agricultural sector on market economy and foreign demand was such that “*statistics conducted by the Bank of Brazil in the 19th century revealed that the country could export up to 80% of all agricultural production*” (OLIVEIRA; STEDILE, 2005)⁹.

Later, the two World Wars mark, respectively, the beginning of the Brazilian industrial cycle and strong economic growth marked by agricultural modernization.

The development of the agribusiness as known today in Brazil, passed through a agronomic research revolution since the 1960s. This period, known as the “Green Revolution”, have enabled the country to register important productivity gains and to succeed in several areas of agribusiness such as many commodities products (soybeans, corn and sugar cane) although increasing financial dependency on external market fluctuations and national subsidies.

Many researches has shown that “*with the increasing dominance of industry over agriculture and the subordination of the latter to the first, increasing proportions of these agricultural activities are now fully subject to industrial capital, which is a worldwide trend*”¹⁰.

During Medici's military government and the application of a National Development Plan from 1972 to 1974, an “economic miracle” was announced: opening the domestic market to foreign investment various multinational companies were installed, producing for the forcing market. About this “miraculous” period,

8 ANVISA (07/12/2011)
http://www.cartamaior.com.br/templates/materiaImprimir.cfm?materia_id=19160 [visited on 07/05/2012].

9 OLIVEIRA, Ariovaldo U. ; STEDILE, João P. (2005) “A natureza do agronegócio”, P. 08, Brasília, Editions Via Campesina.

10 SANDRONI, Paulo (org.) (1999) “Novissimo Dicionario de Economia”, Sao Paulo, Best Seller, 1999.

the Brazilian economist Celso Furtado¹¹ asserts that “*during this period, despite a considerable increase on GDP, we find no increase on economic autonomy to self-transformation, or any capacity to fund this development*”.

Studies by G. Delgado (2010)¹², shows the progress on land reform from the end of military government (1984): social movements restart to articulate, land reform was back on the political agenda, the first National Plan for Agrarian Reform (PNRA) was prepared and the 1988 Constitution legitimate land's social function.

Nowadays, agribusiness and therefore, latifundia, engenders many social problems such as employment, hunger and thus, violence. As we will see, the access to land is a principal obstacle to food sovereignty. The scenario is alarming: less than 1% of landowners controls 46% of all cultivable area, while 53% of workers owns less than 3%¹³.

2.2. Present Peasantry Situation

Peasants may be defined as small-scale, family based farmers, including both owner cultivators and tenants¹⁴. In general, peasantry is characterized by production based on family labor, using seasonal hand-paid labor, where rural workers detain the ownership or rent of the property and working tools (hoes, plows, tractors and specialized machinery), they maintain full or partial autonomy in property management by owning all or part of production.

Throughout the process of capitalism evolution, its existence has been threatened constantly against the advance of large properties (latifundia) and inherent cultivation techniques. In general, as the capitalist production progresses, the peasantry keeps losing ground. The high competitiveness

present on industrial agriculture due to the size of production (large-scale) tends to a massive exclusion of those who cannot afford the investments.

Abramovay (1992)¹⁵ differentiates family-farming in developed capitalist societies from the traditional peasantry. While traditional peasantry may represent a lifestyle characterized by the personalization of social links and the lack of accountability on production, small-scale farms, according to the author, can also be “*highly integrated to market and capable to incorporate technical advances and respond to government policies [...] what was primarily a way of life has become a profession, a way of working*”.

Since 2003, a government's measure “in favor” of these small farms, was the creation of agricultural insurance through rural credit and the access to credit lines for further investment and marketing for family farmers. Credit passed from 2 to 5 billion Reais (Brazilian currency) through the PRONAF (National Program for Strengthening of Family Farming). It didn't reduced the public resources that have been allocated by the Bank of Brazil and BNDES (National Development Bank) to large-scale farms dedicated to export. Bank of Brazil announced in the media, a loan volume of more than 5 billion Reais to fifteen major food producers and multinational companies settled in Brazil¹⁶. They received the same amount of funds that were intended to 4 million farmers. Thus, although the government seems to be committed to agrarian reform and offers programs that support family farming and peasantry, in practice, there are clear priorities. Family farming produces 70% of the food arriving on the table while the Brazilian agribusiness produces only raw materials for export. From the total 18 million adults rural workers, 15 million are work in family farming.

11 Furtado, Celso (1981) *O Brasil Pós-milagre*. São Paulo: Editora Paz e Terra, 1981.

12 DELGADO, Guilherme (2011) “A questão agrária e o agronegócio no Brasil”. In: CARTER, Miguel (org.). “*Combatendo a desigualdade social: o MST e a reforma agrária no Brasil*”. SP: UNESP

13 IBGE <http://www.ibge.gov.br>

14 OTSUKA, Keijiro (2008) *The New Palgrave Dictionary of Economics*, Second Edition.

15 ABRAMOVAY, R. (1992), « *Paradigmas do capitalismo agrário em questão* ». São Paulo: HUCITEC/UNICAMP.

16 OLIVEIRA, Ariovaldo U. ; STEDILE, João P. (2005) “*A natureza do agronegócio*”, P. 08, Brasília, Editions Via Campesina.

In terms of rural employment, agribusiness employs only 15% of the Economically Active Population (PEA), against the remaining 85% working in family farming¹⁷.

2.2.1 Food Security in Rural Areas

“We call those the barbarous time. But if the forms have changed, the relations have remained the same, and the worker is forced, under the name of free contract, to accept feudal obligations. For, turn where he will, he can find no better conditions. Everything has become private property, and he must accept, or die of hunger” (Kropotkin, 1906)¹⁸.

Malnutrition is to have an improper diet or nutrition, either with low or high consumption of calories. In this case we question the reasons for undernourishment in Brazil, which is characterized by low standards or insufficient calorie intake. Hunger happens when scarcity of food is frequent and there's no security about the fact of eating every day.

The National Council for Food and Nutritional Security (CONSEA) defines food security as the *“right of all to regular and permanent access to quality food in sufficient quantity, without compromising access to other essential needs”¹⁹.*

Brazil, 2009, the National Survey by Household Sample (PNAD)²⁰ showed that 65.6 million people (30,2% of the population) had some dietary restrictions or at least some concern about the possibility of restrictions occur due to lack of resources to buy food.

According to Andrew MacMillan FAO: *“Hunger is the most tangible manifestation of the extreme poverty problem in Brazil”²¹.* Although few people die of starvation, food insecurity and

malnutrition are common ailments.

Besides the concentration of land and the means of production, the mechanization of the “Green Revolution” contributed to decrease the need of rural workers. Consequently, a strong rural unemployment was observed and rural poverty increased. Rural exodus was for a long period the exit from rural penury. Difficulties linked to the lack of work, infra-structure and the social “status” of urban modern life (again, the myth of development and the desire to succeed on capitalistic patterns) conduct specially the youth depart.

With the poverty and political negligence, food security was weakened and indexes of food security shows a dramatic reality nowadays: moderate and severe undernourishment are found, respectively, in 17% and 9% of rural residences, against 11,4% and 6% in urban residences²².

We can assume that the situation is not only due to lack of incomes or work but specially due to the land distribution in Brazil, that is to say, the land concentration in hands of few and the way they benefit from it.

3. Food Policy in a glimpse - Fome Zero

The “Fome Zero” (Hunger Zero) program was implemented in 2003 under the Plan for Growth Acceleration (PAC) aiming to eradicate hunger and social exclusion. The program was announced as not designed to be an assistance policy: the immediate support was meant to be combined with structuring actions of the PAC in the areas such as health, education and vocational training, in order to break the cycle of poverty and economically empower families in risk.

Specific policies are designed to allow direct access to food for the poorest families. In reality, emergency basic food baskets are distributed but these donations aren't meant to extend in time. The program is open to nearly 10 million families, and allow them to make three meals a

17 http://www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=1464&id_pagina=1

18 KROPOTKIN, P. The conquest of bread (1906), AK PRESS, Edinburgh, 2007.

19 CONSEA (2004) Princípios e Diretrizes de uma Política de Segurança Alimentar e Nutricional.

20 IBGE – Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics).

21 Mc MILLAN, A. « Brésil, la faim qui tenaille » <http://www.fao.org/french/newsroom/news/2003/13320-fr.html>

22 http://www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=600

day. According to the Global Hunger Index²³ of the International Food Policy Research Institute, the percentage of undernourished people has been dropping from 11% in 1990, to 9% in 2001, and 6% of total population in 2011, around 12.1 millions people.

3.1. Ambiguities on Agrarian and Environmental Policies

It is difficult to grasp the real objectives of economic and social reforms in Brazil. Social and environmental concerns are often dressed as pretext to warm up the economy. In fact, the predominant idea seems to be that the answer for poverty and hunger lays on the acceleration of economic growth.

There are several government sectors working for developing agriculture in different directions, composing bubbles of contradictory policies. The Ministry of Agriculture, Livestock and Supply, for example, is responsible for major productions (in economic terms, such as sugar cane) and the international relations for agribusiness - which seems credible once the major involved are multinational corporations. Thus, the Ministry encourages the production and consumption of biodiesel and supports the participation of family farming on the sector, maximizing the area devoted to commodities. It facilitates the transition from peasantry (traditional family farming based on polyculture) to agribusiness while financing the ways to farmers to enter the competition, consequently dedicating most part of its fields to the specific crops and abandoning subsistence agriculture.

The Ministry of Agrarian Development (MDA) is responsible for the redistribution of lands from the agrarian reform and the integration of small farmers to the agricultural industrialization process. Although the land distribution is currently occurring significantly, the contemplated farmers are frequently found in difficulties to have economically viable farms. The National Institute of Colonization and Agrarian Reform (INCRA),

subjected to the MDA, is the main actor of the agrarian reform and manage the public lands. INCRA is expected to work against land concentration by facilitating the access to it, by creating decent establishment and regularization of the “*assentamentos*” (occupations or settlements). It is also expected to offer another economic view that “*changes the patterns of production technology in the settlements to make it viable on economic, social and environmental plans*”²⁴, emphasizing on organic farming as one of the main points to work with the settlers.

Furthermore, the Family Farming Department, also attached to the MDA, promotes rural development through the implementation of public policies to strengthen family farms. Its purpose is to work against rural poverty through technical assistance, establishment of a minimum income, the access to credit and the competitiveness of the production.

Since 1960s, period characterized by the Green Revolution, Brazil rigorously practices agriculture promotion policies, that we qualify as Industrial and Patronal, based on important credits massively accorded to latifundia owners. Essentially practicing agriculture exportation, the result is the increase of commodities dependency on international trades and exchanges. Meanwhile, the focus on production for domestic consumption doesn't follow the increase of urban population (which depends on small-scale production), the effect is felt particularly on higher prices for consumers.

The politics on agriculture production have on the one hand, the will to continue to develop intensive agriculture, including the introduction of GMOs, funding for agronomy research and new production technologies, monocropping and all that it represents; on the other hand, there's a desire to reduce inequality, poverty, environmental destruction, to promote family farming and nature conservation.

As we could verify, the organizational structure of Brazilian government insists, whether is

23 <http://www.ifpri.org/book-8018/ourwork/researcharea/global-hunger-index>

24 Lacerda, <http://www.mda.gov.br/portal/>

intentional or not, to institutionally split the efforts of interest areas for definitely combating hunger: one is dedicated to facilitate economic growth, supporting agribusiness and inequality, while the other attempts to reduce, through palliative actions, the socio-economic and environmental damage caused by the first.

Political power is unfortunately visibly subordinated to economic power. That undermines food sovereignty which is the ability of the country and society to decide what to produce and for whom: the organization of agricultural production is dictated not by the demand for food but by the needs of the international market.

Public policies have continued to encourage exports and foreign investment through the reduction of charges, the Real exchange rate (which has price stability since 1999), opening the market to Asian demand, accepting new genetically modified crop fields, establishing new alliances with World Trade Organization to bring down trade barriers between the Brazilian products and importing countries.

The evolution of the Brazilian Agricultural Economics shows that Brazil has never shown real efforts to its potential and internal needs, it was guided by the modern global economy. From hand to hand, the vital decisions and resources are spent elsewhere and the food security issue is then relegated to the growth mentality and has been managed as a demand sector.

4. First Steps towards Food Sovereignty

We identify ambiguous strategies also on the fields of Social and Solidarity Economy, because of stated intentions that aren't followed, respected or considered by policy makers, apparently causing separation and the weakening of alternatives to the dominant economic system. Thus, it is difficult to get a complete and honest picture of solidarity-based economy action in agriculture and we believe that it can be explained by the profound regional differences found throughout the country.

In rural areas, a significant number of farmers' organizations aims to organize the peasants

through cooperatives and associations of solidarity economy. We can cite as example the organization of farmers into cooperatives by the Landless Workers' Movement (MST). However, some cooperatives may proceed as market agents and work as real corporations.

Although these initiatives are aimed to improve the socio-economic situation of small farmers, the ecological dimension is very often also contemplated. The development of agroecological production is often part of their goals, however it doesn't prescribe as priority. The ecological concern get spread in the country not only through social and political organizations explicitly ecologist, but also gaining ground as a current of thought among many movements, peasants, indigenous and citizens.

Solidarity economy initiatives in rural areas demonstrate to be more active on the economic and social dimensions of sustainable development, but the ecological dimension is also very frequently present when structuring a new model of local development.

“La Via Campesina coined the term ‘food sovereignty’ in 1996 to advocate a model of small-scale, sustainable, agroecological farming. Food sovereignty is the right of all peoples to produce and consume healthy and culturally appropriate food which has been produced through ecologically and sustainable methods. It is also their right to define and own their own food and agriculture systems. Food sovereignty puts those who produce, distribute and consume food at the heart of food systems and policies, rather than forcing those systems to bend to the demands of markets and corporations. It develops a model of small scale sustainable production benefiting communities and their environment. It puts the aspirations, needs and livelihoods of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. Food sovereignty prioritizes local food production and consumption. It ensures that the rights to use and manage lands, territories, water, seeds, livestock and biodiversity are in the hands of those who produce food and not of the corporate sector.”²⁵

De Schutter (2011) report²⁶ on Right to Food

25 ZACUNE, Joseph (2012) “Combating Monsanto Grassroots resistance to the corporate power of agribusiness in the era of the ‘green economy’ and a changing climate”

26 SCHUTTER, Oliver (2010), Report on Right to Food for

offered a useful set of priorities for policymakers :

- Support countries' ability to food sovereignty,
- Establish food reserves,
- Regulate financial speculation,
- Ensure national social safety nets against declining export revenues and rising food import bills,
- Support farmers' organizations,
- Protect access to land, putting a moratorium on large-scale foreign land purchases,
- Promote the transition to environmentally sustainable agriculture,
- Defend the human right to food.

5. Degrowth and Permaculture

Recent studies²⁷ show that the research on environment-friendly methods of agricultural production are closely linked to criticism of modern society since the early 1900s: "*it [organic farming] was founded and developed by men and women in general struggle with the main processes and key institutions of Western civilization that has been in place since the industrial revolution*". The founders of organic agriculture, as suggested by Y. Besson (2011)²⁸ have initiated a movement promoting more harmonious relationships between cities and the countryside, worker solidarity and awareness of, since then, the dominant development model.

Early in the 20th century in many parts of the world, political actors such Kropotkin in Russia, already seem to address issues on environment and development, acknowledging that humanity "*has cleared the land, dried the marshes, pierced the forests, made roads, [...] has created a complex machinery, wrested her secrets from Nature*"²⁹. That was only the beginning, when the nascent industrial society only covered a few nations, and it was still based on steam engines. Since then, these actors reclaim the right to well-

being³⁰ and criticized the functioning of the nascent development system.

Considering that humanity has now four times 1900's population, that since the 1950, oil (which is a limited non-renewable resource) took the lead over all other energy sources, that technological revolution since the advent of computers and Internet is outstanding, we can dare to say that the context is certainly not the same and therefore stakes have changed. Modern society has more scientific knowledge, moves and communicates much faster, invents all kinds of modern comforts but some things never changes: the speed of nature itself, the necessity of all living forms to be fed, and the certainty that Men depends on the environment and not the contrary. The economy must take into account the environment as a whole: "externalities" doesn't exist, is its a very mistaken concept.

Further, the limits matter both of humanity itself (defended since Malthus³¹) and the resources to maintain human life appear to ensure the need for alternative economic systems.

Published in 1972, the report "Limits to Growth"³² presents a foresight of the consequences of an exponential and unlimited growth in our limited resourced planet. Since then, many discussions and questionings took place about how this contradictory system (doesn't) works and how to improve alternatives and sustainable solutions.

The "degrowth current", which is one of he main ideas defended on this paper, proposes many actions likely to revert the actual ecological and economic impasse. However, and taken as a process, the degrowth current is represented in practice by some peculiar tools, be it in political, international or personal spheres. Degrowth "*is a social movement born from experiences of co-housing, squatting, neo-ruralism, reclaiming the streets,*

the United Nations, HRC/16/49.

27 BESSON, Y. (2011) Les fondateurs de l'agriculture biologique, Sang de la Terre, Paris.

28 Ibid.

29 Ibid. KROPOTKIN (1906)

30 Ibid. KROPOTKIN (1906)

31 MALTHUS, T. (1798), "An Essay on the Principle of Population: Library of Economics" (description), Liberty Fund, Inc., 2000, *EconLib.org*

32 MEADOWS, Donella H., et al (1972) The Limits to Growth. New York: Universe Books.

alternative energies, waste prevention and recycling"³³. Degrowth also implies "a reduction of production and consumption in physical terms through down-scaling (and not only through efficiency improvements)"³⁴.

5.1. Permaculture Toolbox

In this paper we want to present Permaculture as a toolbox for the changes proposed by Degrowth movement as we did previously with the eco-villages structures. All these alternatives are closely related: they walk together. One isn't a component of the other, but they are complementary. We will cite many alternatives proposed, many tools, and we consider the understanding of an active political ecology strategy, that take into account the complex social metabolism involved in order to make it real in Brazilian reality. That is the subject of another essay.

The term "Permaculture" was originally used by Australians Bill Mollison and David Holmgren in the early 1970s, first to describe a permanent agriculture and then, for a permanent culture: it is essential for a system to be sustainable, to include social aspect and ethics. Several techniques are applied to create integrated systems for the sustainability and the self-perpetuation of plants and animal species, including human culture. Almost nothing is new: some of these techniques have been used for thousands of years in different parts of the world, by people who have never heard the word "permaculture". The real intention of Permaculture is to show the concrete possibility to skip from the critic situation human society faces.

Permaculture is considered a interdisciplinary, systemic or holistic methodology, which aims to

help on designing, planning and building ecologically sustainable human societies, socially equitable and economically viable. It values the ethical behavior and follows principles of energy efficiency. From this view result the techniques to integrate harmoniously human activities and ecosystems. Permaculture promotes the rehabilitation of sites degraded by human activity and the re-design of territories (house, neighborhood, city, industrial area, plots damaged by pollution, etc.).

The three ethical principles are: care for the Earth, care for the people and Fair share.

"Caring for the Earth" means to maintain in good conditions the land used by man, involves respect, harmony and equilibrium. The overall management of pastures or the recovery of degraded sites are, for instance, responses to the problems found on agrarian reform settlements. Agroforestry is also associated with optimizing space use. Organic farming and biodynamisme break with agriculture chemical dependency. The conservation and defense of native and creole seeds, exchange and free distribution of these seeds or exchange through seed banks is a form of resistance to patented seeds' corporations and a form of struggling against genetically modified seeds. For the empowerment of farmers and peasants, the actions might include warned and organized groups able to bring together scientific, diverse and traditional knowledge. True concern about human well-being are the reasons of social action. That is represented within the actions based on the principles of "caring for the people".

Monocropping and standardization of food by multinational corporations directly affect eating habits and traditional household practices of all societies. Thus, those who could have their nutritional needs, based on the biome where they live, have to be more frequently the need for a supermarket.

Either home gardens or agricultural agrarian territories, may be laboratories of experimentation, where it is possible to transfer knowledge and know-how by promoting and

33 MARTINEZ-ALIER, Joan (2012) "Environmental Justice and Economic Degrowth: an Alliance Between Two Movements" in "Capitalism Nature Socialism" Volume 23, Issue 1. on Taylor&Francis Online <http://www.tandfonline.com/doi/abs/10.1080/10455752.2011.648839>

34 KALLIS, G., (2010), The Degrowth Propositions and Research Questions, 2nd international conference on economic degrowth for ecological sustainability and social equity, March 26-29, 2010, Barcelona, Spain

caring for traditional and native species. Keeping and maintaining such resources can bring economic benefits for communities. It is possible to strengthen the economic resilience by increasing the varieties of species, allowing at same time the production of useful derivatives (cosmetics, medicines, nutritional supplements, etc.) for local exchange and use by the community. The biodiversity is associated to eating habits and also to health practices and preventive medicine.

Agricultural techniques and habitat on permaculture are inspired by natural mechanisms that are expected to “do the work for us”. To do so, it is necessary to create a diverse ecosystem, where the rich interactions between the elements allow an intensive use of total resources, improving results and maintaining itself in long term. It is difficult to separate agricultural and habitat techniques as both are generally linked in the same system and follow the same logic.

Reference principles for a design in permaculture are suggested. For example those proposed by Bill Mollison³⁵ include locate elements in areas classified according to their objective (conservation, production, housing, processing, etc.), each element providing multiple functions, for each function a multiplicity of supports to develop small-scale intensive systems, review of energy efficiency standards, the use and value of renewable resources, of energy cycles, acceleration of succession and evolution, no waste production and positive attitude.

Inspired by the wild or synergistic agriculture, Permaculture agricultural techniques come from the idea that it is the simultaneous action of independent elements (plants, microorganisms, fauna and flora of soil, humus, etc.) that, together, have a greater effect than the sum of their parts (Fukuoka, 1985)³⁶.

After a long observation of nature, Masanobu Fukuoka – a Japanese farmer and scientist, proposed five major principles for a “Do-nothing-

farming”, or natural farming: no plowing, no fertilizer, no pesticides, no sowing, no pruning. He has long experimented these principles within rice plantations. The result is less germination and plants, but a superior result compared to agribusiness method, because of the energy expended (no fuel, labor, pesticide or fertilizer) for an equivalent number of seeds sown (Fukuoka, 1983)³⁷.

The World Health Organization in 1994 defines the quality of life as “*an individual's perception of his position in life, in the context of culture and value system in which he lives, in relation with its objectives, expectations, standards and concerns*”³⁸. It is a large conceptual field, comprising individual's physical health, psychological state, independence level, social relationships, personal beliefs and its relationship with the specificities of its environment. Assessing the quality of life can not be reduced to that of health. Health is not sufficient to explain differences in quality of life.

The proposals of Permaculture to improve life quality for people in cities passes through a wealth management by the community. Participatory management of the local budget, as already experimented by Brazilian cities, such as Porto Alegre. Permaculture advocate for investment in co-housing or eco-villages structures where tools and facilities (transportation, laundry areas) are shared. Access to housing is in the core of concerns by the fact of promoting self-construction and use of local resources to do so.

The popularization of education through popular universities and schools are another proposal and concrete action on permaculture initiatives worldwide. The idea is to advocate for spreading knowledge to allow people to create a critic sense, improve their capacities and find their place as citizen.

35 MOLLISON, Bill (1979), “Permaculture 2, aménagements pratiques à la campagne et en ville”, Equilibres Aujourd'hui.

36 FUKUOKA, Masanobu (1985) “The natural way of farming”, Sao Paulo, Nobel.

37 FUKUOKA, Masanobu (1983) *The One-Straw Revolution: An Introduction to Natural Farming*, Guy Trédaniel Éditions .

38 <http://www.lab-epsilon.fr/productions/glossaire-101.html> [visited on 08/05/2012]

Another intention is to train individuals in a set of permaculture design principles to give the opportunity to them, to design and build their own environments by forming territories increasingly self-sufficient - that is to say, communities with reduced dependence on industrial systems of production and distribution that we identified as sources of systematic degradation of ecosystems and society.

Education is also in the core of Permaculture concerns, it is related to people's connexions and interactions: "*In the fields of interpersonal relationships and learning of sociability, it's hard to imagine what will be the behavior of human beings who had all the time of their childhood and adolescence past isolated in front of their screen*"(ROCARD³⁹). Because of that reason, the transfer of knowledge and expertise in Permaculture are conducted on a special way through introductory and immersion courses, courses in Permaculture Certification (minimum time charge of 72 hours), the Diploma of Permaculture and other education specific programs.

The PDC (Permaculture Design Certification) is the standard course of permaculture design that follows the structure proposed by Bill Mollison and David Holmgreen. It is an education which recognizes everyone's willingness and ability to grow and develop at all ages. It is not limited to the dissemination of academic culture or art, but also science, technology, sports and recreational activities. These apprenticeships are seen as an opportunity to develop the ability to live in society: confronting ideas, sharing a group life, speaking in public, listening and practicing the non-judgment and non-violent communication.

Work: by putting in evidence the characteristics of traditional forms of work, given by the theories of management, or social and political theories - Weber, Marx, Arendt⁴⁰ and many other thinkers who have explored the expressions power and effects of modern work - the philosophy steeped

in Permaculture systems evokes a particular notion, inspiring freedom or even seen as revolutionary.

Work is a harmonious integrated part of life, it is not an obligation or a source of stress, it doesn't "deviates" life time for a direction that is not in communion with the values or social intentions of the person. The community (cities, groups, organizations) life quality requires attention and effort given to vital activities to the maintenance of life, care for the environment and care for the people. Further, the notion of time and willingness, which has personal dimensions for individuals, is taken into account for the organization (skills, tasks) and the structuring of productions (spaces, logistics, distribution). Permaculture would proclaim work as means of human liberation in the process of economic democratization, creating an alternative to the alienating dimension of wage labor and capitalist labor relations.

The combination of shared philosophies in a permaculture system can be very diverse: structures rather engaged in political or social struggles, and others in a process of human development through art or by spiritual paths. The objective is to offers a free and open atmosphere that is at same time engaged and absent of dogmas whatever is possible, and even easy, to find more strict groups.

Economic vision: However the basic rule would be to add economic value to the production. The design of a permaculture system is commonly known as "design" by its practitioners. The design seeks to provide a wide range of solutions including the ethical basis as part of the final draft. This is a holistic approach that would add value to the system considered (location, area, structure). Each final design therefore should include economic considerations as well as giving equal weight to maintaining ecological balance, ensuring that the needs of people working on the project are considered.

The economy of a permaculture system requires a balance between three aspects, or decisive factors, which includes: justice, environment

39 ROCARD, Michel (2006), Embryons de Solutions. Pouvoirs Revue Française d'études Constitutionnelles et Politiques, n 119. P. 101-112. Seuil, Paris

40 Max WEBER, Karl MARX, Hannah ARENDT

and viability – is the principle of Fair Share. A cooperative would be a good example of such structure where workers are also owners. Moreover, the whole economy is weighted by its kindness to the environment. Considering that no economic system can exist independently of its ecosystem, what we convey to call “external costs” in ecological economics, are actually considered and included in the activity process.

Tools normally associated with the solidarity economy practices are also practiced and stimulated by Permaculture initiatives such as the establishment of working cooperatives, ethical and communities banks, local currencies, promotion of volunteering, among others. Three initiatives are very common in Europe:

1. Local exchange trading schemes (LETS): “groups of people who practice the multilateral exchange of goods, services, and knowledge”⁴¹;

2. Association for Maintaining the Peasant Agriculture (AMAP): these associations work in form of a Community-supported Agriculture (CSA) and are intended to “*promote organic farming and those struggling to survive against agribusiness. The idea is to create a direct link between farmers and consumers, who agree to buy the production at a fair price and paying in advance*”⁴². Consumers support its functioning once they “*often take on added risk because they pay a fixed amount in advance, regardless of the realized quantity and quality of the harvest*”⁴³

3. World Wide Opportunities on Organic Farming (WWOOF): a network to “*link volunteers with organic farmers, and help people share more sustainable ways of living*”⁴⁴.

6. Conclusions

Permaculture has won a large international audience. The recent “permaculture movement” continues to develop original ideas and to experiment their adaptation to very local and

41 http://selidare.org/spip/article.php3?id_article=230

42 [Http://www.reseau-amap.org](http://www.reseau-amap.org)

43 MARTINEZ, Steve, et al. (2010), “Local Food Systems – Concepts, Impacts and Issues”, Economic Research Report N. 97, USA Department of Agriculture.

44 <http://www.woof.org/>

diverse scales, creating and incorporating a range of alternatives. Information flows on networks of publications, permaculture gardens, intentional communities, training programs and forums on the Internet that shares experiences. In this way, permaculture has become, as science, a form of natural engineering as well as an important informal institution with social ideals. Massiah (2011) notes that an “*environmental emergency can focus citizens' expertise and the construction of alternative power*”⁴⁵

We expect to have shown that the agribusiness is a ephemeral economic fetish, that is lasting more than it should: it is subordinated to intensive capital technologies (expensive and obsolescent planned) and extremely dependent on the, sooner or later, scarce fossil fuels. It has indeed a court term return, as we could observe by the enormous productivity gains of the last 50 years, but also court durability as it borders its own limits. Political efforts should be directed to food sovereignty instead of food security. That requires a holistic comprehension of the food system and that evolves to the massive cultural change Degrowth current argues for. Permaculture methodology can be a useful tool in this sense.

“*Principal factors include: rapid increases in the use of agricultural crops and land for energy; increasing demand for feed crops as diets shift to include more meat and fish in some of the large, rapidly growing developing countries; border measures during the crisis that exacerbated price increases; trade policies that had, over time, weakened developing countries' food-production capacity*”⁴⁶

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