

## Food Security

It is not the intention here to exhaust the subject, but to list and comment on the main aspects and possible solutions. In the Guarani language the word **MONGARU** means to Nourish oneself.

Food Security is a focus theme, the backbone of any humanitarian program; and surely AGRIBUSINESS in its broadest conceptualization represents the biggest business in the world.

Historically, based on the example of Brazil, the FOME ZERO (ZERO HUNGER) Program during the 1990s (as well as similar programs in Latin America, Africa and Asia), had the objective of removing millions of Brazilian families from the situation of "hunger". There were mistakes as well as successes. Unfortunately, corruption and inefficiency were victorious. The clearest thing is that "solving the hunger issue", from the point of view of supplying the recurrent food needs .... is possible, but it goes beyond simple nutrition, and requires multiple parallel actions. And the most important thing: the will to want to solve the issue. The purpose.

We Agronomists have the habit of saying very popularly the following: either you grab the bull by the horns ...otherwise it will drag you down. Clearly...grab by the horns... here means what we clarify below: the most important point in our vision is that the solution is directly related to the SUSTAINABLE LOCAL DEVELOPMENT of the community, the county. That is the only way. In the MONGARU Project - Family Farming and Food Security, as well as in our Sustainable Communities Projects such as KUARAHY, the issue of NUTRITION and its solution is highlighted, as well as the relationship of Nutrition with Health. The connection between Project MONGARU (Nourish Yourself) and Project KUERA (Heal Yourself) is vital. In addition, the theme Sanitation (Project Y POTY PORÃ) which has direct implications on the theme Health is also taken into account. The investment of USD \$ 1 in Sanitation can represent an economy of up to USD \$ 9; as well as proper nutrition will represent savings in health. That is why... to grab by the horns, means to consider all aspects (in Engineering it is usually called "edge or boundary conditions"). Also, nowadays, called Integration of Engineering.

Below we specifically conceptualize the topic of **FOOD SECURITY**, some directly interrelated issues, such as the relationship between nutrition and health, and aspects of loss and waste in the agribusiness chain. Believing that ensuring FOOD SECURITY is simply about producing more food is a lie - unfortunately a very common one. There is a lot of misinformation and misinformation.

The hunger crisis is spreading throughout Latin America. Statistics - and there are controversies - estimate that around 60 million people in the region are hungry. !!!! On the other hand, **FOOD INSECURITY reaches numbers that exceed 100 million people.**

We clarify that the intention is to provide a solid basis for actions that provide real solutions. The road to real solutions will only be possible if, apart from the financial resources, **there is**

**a real will, a commitment, to solve.**

The issue of **FOOD SECURITY** is truly the backbone of any Humanitarian Program in any geography and culture.

We conceptualize **FOOD SECURITY** simply as the recurrent guarantee that all people have access to nutritious food that meets their daily needs for an active and healthy life. This includes attention to **FOOD SECURITY**, **FOOD SOVEREIGNTY** of production, and of course sufficient supply of **QUALITY DRINKING WATER**.

For us it is appropriate to define **AGRIBUSINESS** today broadly as, for example, a network of businesses based on producing, processing, storing, distributing and marketing agricultural products and managing the provision of agricultural services, supplies, machinery or personnel. Not only as Commodity Agriculture for export. There are also many misunderstandings with the expression Family Farming. The vast majority of agribusiness activities that provide food to the table are, in their origin, of family structure.

**There is a direct relationship between nutritious food and good health!**

Everyone knows the famous phrase of Hippocrates:

'Let food be thy medicine and let thy medicine be food'.

On the other hand.

*"When health is absent, wisdom cannot reveal itself, strength cannot fight, intelligence cannot apply itself, art cannot manifest itself, wealth becomes useless." Herophilus.*

It turns out that the relationship between food and health is currently very deteriorated. And it is not the purpose of this document to analyze the reasons for this situation. And yes, to propose solutions!

In our way of thinking we are convinced that to solve the serious problem of hunger and to say assertively that the population, especially the neediest, the extremely poor, is nurtured, it is necessary to consider the following aspects, that are interrelated: Currently hunger in the world has two origins:

- Scarce food; literally lacking the food, or lack of resources to obtain it; or lack of production;
- Scarce nutrition; the existing food does not meet the body's nutritional needs.

**FOOD and NUTRITION.** Being fed does not necessarily mean **NUTRITION**. It is common that eating habits are wrong because they are **NOT NUTRITIOUS** (Carbohydrates / Proteins / Fats ratio) and also the vast majority of people, who fortunately have access to food, eat too much food, or in the wrong way, which causes many chronic and autoimmune diseases.

I had the opportunity to act directly as an Expert and Lecturer in the Joint FAO & IAEA Technical Cooperation Programme and in other consulting opportunities, such as in the Inter-American Institute for Cooperation on Agriculture (IICA), the National Institute of Colonization and Agrarian Reform (INCRA) of Brazil (Rural Cadaster, Land Regularization and Settlements) in more than 4,500 Settlement Projects, in the different Stages of the Agribusiness Chain. For Banco do Brasil in Credit Auditing for Agriculture (Programa Nacional de Agricultura Familiar -

PRONAF). Or then the Project: *Geo Cadaster and Land Use Mapping in the Agribusiness Chain - Strengthening of the Rural Productive Chain to Supermarkets, Industrial Restaurants, Fast Food Chains and other Vertical Markets in the Metropolitan Area of São Paulo - Brazil.*

I have observed that in many situations there were quality and assertive diagnoses made by serious technicians about the situations in different countries and conditions. The issue was always to manage to put into practice the recommendations of the technicians, since these always clashed with political interests and were not implemented. Many diagnoses, still without solutions. And unfortunately, with many actions of resource diversion and corruption.

LOSSES AND WASTE IN EACH STAGE OF THE PRODUCTIVE CHAIN are very shocking worldwide. The percentages vary in each segment of the supply chain, depending on the region and type of food. Impressively, losses and wastage can reach rates of almost 50%, which is really very sad and intolerable.

It is urgent to intervene, improve and optimize the stages of the Production Chain, since losses and wastage reach unacceptable levels in practically all stages.

One of the representative studies that exist is presented below, carried out by FAO.

The main stages in the Agribusiness Production Chain comprise:

1. Production which contains Agricultural and Agrarian aspects;
2. Post-Harvest;
3. Processing;
4. Distribution;
5. Consumption;
6. Disposal / Recycling;

The study below is conducted for: Cereals, Fruits & Vegetables, Oilseeds & Pulses, Tubers & Roots, Dairy, Fish & Seafood, Meat.

Losses and wastage vary according to the type of product, stage and region.

**WASTE AND LOSSES IN THE AGRIBUSINESS CHAIN - GLOBAL**

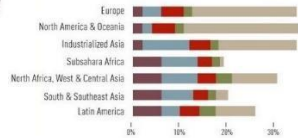


**30% CEREALS FOOD LOSSES**

In industrialized countries, consumers throw away 286 million tonnes of cereal products.

**763 billion boxes of pasta**

■ Agriculture ■ Distribution  
■ Postharvest ■ Consumption  
■ Processing

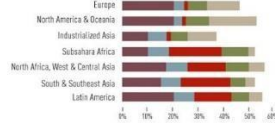


**45% FRUIT & VEGETABLES FOOD LOSSES**

Along with roots and tubers, fruit and vegetables have the highest wastage rates of any food products; almost half of all the fruit and vegetables produced are wasted.

**3.7 trillion apples.**

■ Agriculture ■ Distribution  
■ Postharvest ■ Consumption  
■ Processing

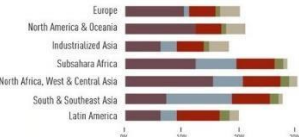


**20% OILSEEDS & PULSES FOOD LOSSES**

Every year, 22% of the global production of oilseeds and pulses is lost or wasted.

**This is the same as the olives needed to produce enough olive oil to fill nearly 11,000 Olympic-sized swimming pools.**

■ Agriculture ■ Distribution  
■ Postharvest ■ Consumption  
■ Processing

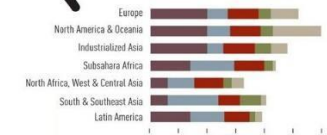


**45% ROOTS & TUBERS FOOD LOSSES**

In North America & Oceania alone, 5,814,000 tonnes of roots and tubers are wasted at the consumption stage alone.

**This equates to just over 1 billion bags of potatoes.**

■ Agriculture ■ Distribution  
■ Postharvest ■ Consumption  
■ Processing

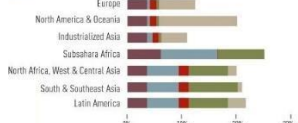


**20% DAIRY FOOD LOSSES**

In Europe alone, 29 million tonnes of dairy products are lost or wasted every year.

**This is the same as 574 billion eggs.**

■ Agriculture ■ Distribution  
■ Postharvest ■ Consumption  
■ Processing

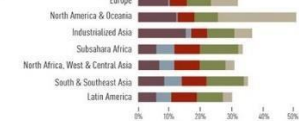


**30% FISH & SEAFOOD FOOD LOSSES**

8% of fish caught globally is thrown back into the sea. In most cases they are dead, dying or badly damaged.

**This is equal to almost 3 billion Atlantic salmon.**

■ Fisheries ■ Distribution  
■ Post catch ■ Consumption  
■ Processing

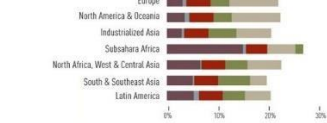


**20% MEAT FOOD LOSSES**

Of the 263 million tonnes of meat produced globally, over 20% is lost or wasted.

**This is equivalent to 75 million cows.**

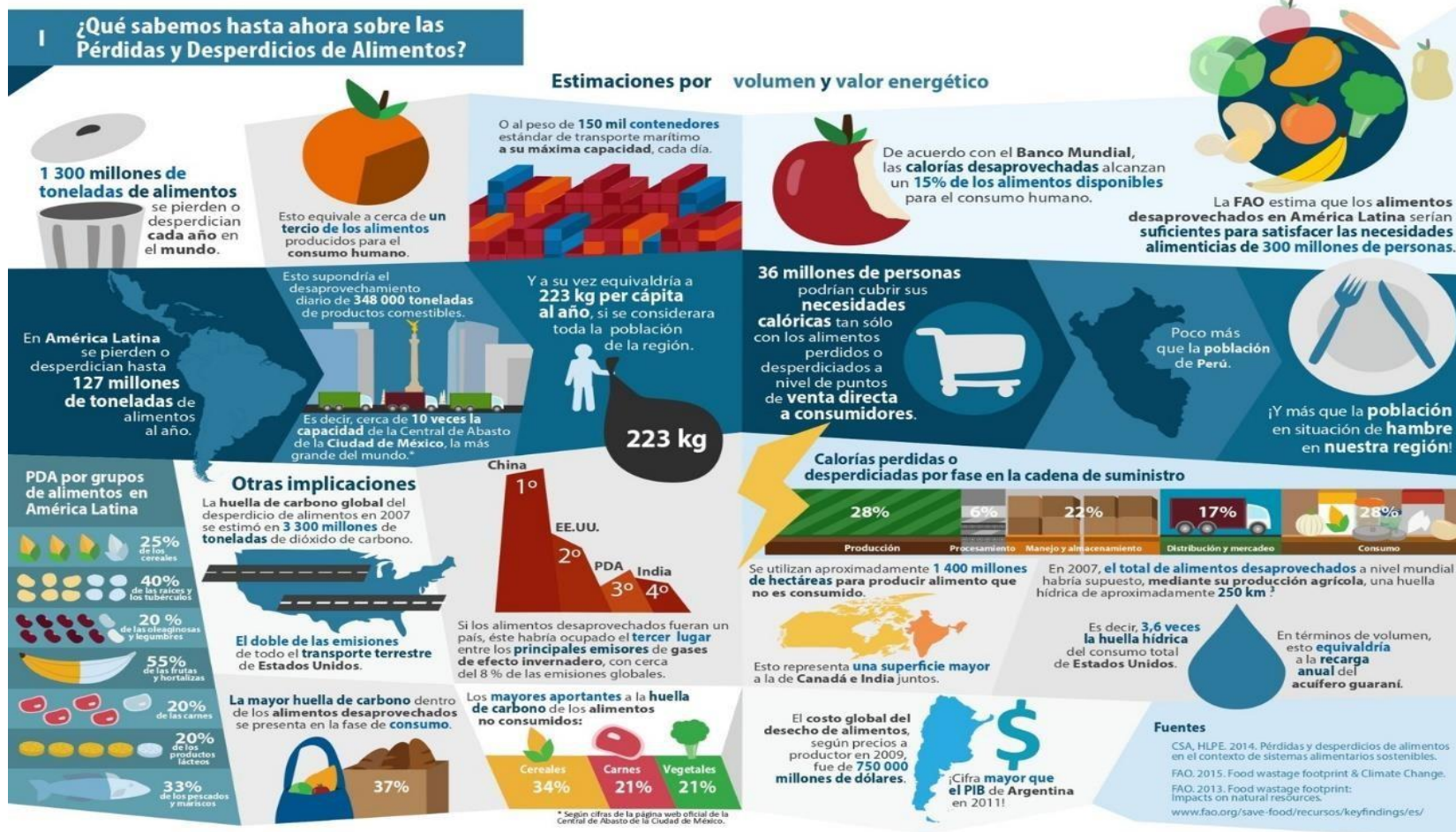
■ Animal production  
■ Slaughter ■ Distribution  
■ Processing ■ Consumption



FAO 2015.



## WASTE AND LOSSES IN THE AGRIBUSINESS CHAIN – LATIN AMERICA



The following is a broad outline of suggested strategies to begin to solve the issue of LACK OF NUTRITION in different scenarios.

Basically, we consider for now the two extremities of the Agribusiness Chain:

- A. The production origin - the rural areas;
- B. The consumption end - especially the urban areas.

## **1. THE AG PRODUCTION ORIGIN – RURAL PROPERTIES**

An action that we have already planned for the Humanitarian Program in Paraguay and the Pilots in the other countries (item 2) refers to the **MONGARU Project - Family Agriculture and Food Security**, at the level of municipalities or watersheds (Local Sustainable Development), with the following priorities:

- ✓ Strengthening Family Agriculture / AGRIBUSINESS and Food / Nutritional Security. It addresses these issues from the point of view of rural producers, small, medium and large producers (all are welcome) and farmers in Rural Settlement Projects. It is the origin of food production. The producers themselves and their respective families are also beneficiaries of their production. In general terms, the production must honor the compromise of an agriculture that sets the table!!!

The main problems to be addressed in rural areas include:

- Lack of Territorial Management and Planning;
- Lack of potable water for human and animal consumption and production;
- Lack of sufficient food production;
- Lack of diversification of crops and animal proteins;
- Lack of agricultural machinery and infrastructure for agricultural production;
- Lack of transportation logistics, nonexistent or precarious roads and bridges;
- High losses and waste in the agricultural chain;
- Lack of adequate family nutrition;
- Lack of opportunities for social, economic and environmental development with rising poverty rates in the communities;
- Precarious social housing;
- Lack of sanitation;
- Lack of medical assistance;
- Lack of garbage recycling;
- Deficiency in infrastructure for education and recreation centers;
- Almost no industrialization (value addition) and adequate marketing of agricultural products;
- Deforestation and environmental degradation.

## **2. THE CONSUMPTION END – ESPECIALLY URBAN AREAS**

The quickest way, in the short term, to put food on the tables of the needy is by acquiring food that already exists. At the same time, production must be encouraged, as explained above. And surely structure an efficient auditing so that everything is transparent as it should be. We are structured to achieve the compliance that is required. There will also be the need to create a registry of beneficiaries.

In Latin America, Brazil is surely, due to its climatic characteristics and territorial extension, the largest food producer. It is truly in a unique situation in the world.

In order to structure a food supply network, we are already in contact with:

- ✓ The largest and most important food wholesalers, as for example in Brazil, at national level, the Benassi and Hasegawa Groups;
- ✓ The most important transport logistics operators;
- ✓ Institutions that offer hot meals on a daily basis and that are structured to grow and replicate their facilities;
- ✓ Professionals and companies / institutions, part is in our team of architects and engineers, who have experience in building infrastructure necessary to offer food, including all the management, for different sizes of groups of beneficiaries.

Whenever possible, purchase food from local suppliers. If it is not possible, there is not enough or non-existent, you have to look for where it is available. In parallel, always encourage production, seeking and assuring Food Sovereignty.

Especially in the case of metropolitan and urban areas of larger size, the suggestion is that actions should begin with the search for established partners who already handle the logistics of transforming food into a plate on the table, i.e., they are already in the routine of providing meals to the population, especially the extreme poor. In all scenarios, it is necessary to attract the attention and participation of organized civil society and **local authorities and leadership**. As the saying goes...no one knows the house better than those who live there. There are regional and local particularities. A mistake often made refers to considering a National Program with centralized management in the central government. In reality, a Program of this nature must be managed in the Counties. Integrated management can be centralized but considering the local capillarity. As is the case of the Humanitarian Program in Paraguay. In this way, open participation to schools, etc. Create a NETWORK. It is necessary to create an Education and Marketing Program with Social Networks, focusing especially on children and young people and the elderly.

In general terms, it could be said that to feed one person per day would cost an estimated US\$ 10, which would represent US\$ 3,650 per year. For 60 million people that value would reach US\$ 219 billion/year.

Once the financial resources have been released, we will be able to continue with the budgetary details and the necessary actions and timetable.