



# BRASIL

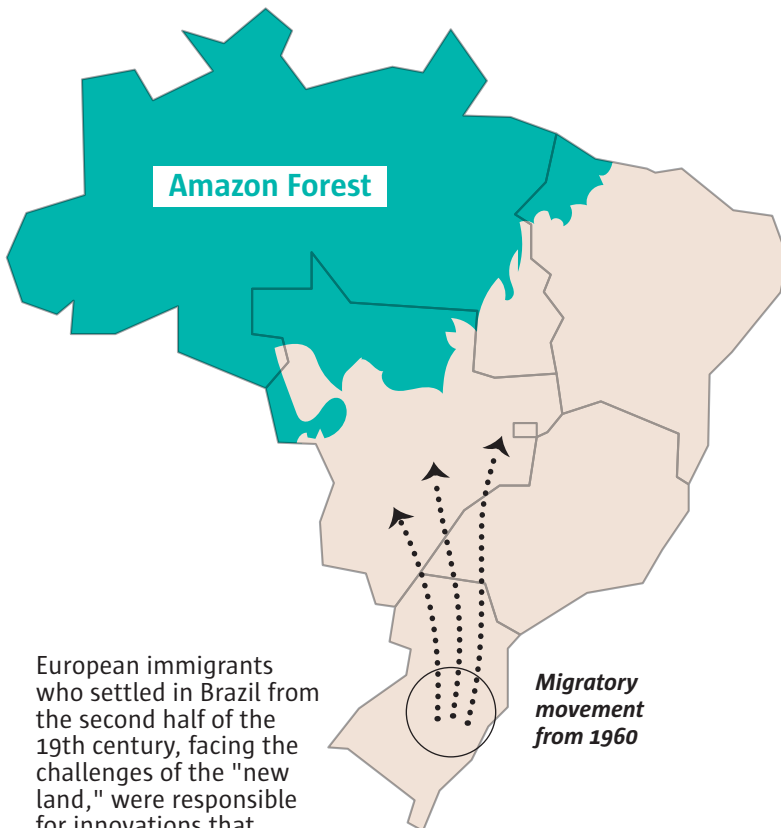
## THE TECHNOLOGICAL INNOVATION PROMOTED BY BRAZILIAN FARMERS

### THE PIONEERING AND ENTERPRISING SPIRIT OF BRAZILIAN FARMERS

**WAS CRUCIAL FOR BRAZIL'S TECHNOLOGICAL DEVELOPMENT AND PRODUCTIVITY INCREASE.**

In the past, when public investment in research was still below Brazilian farmer's needs, they joined efforts and resources to promote innovations in the agriculture and livestock sector.

### MIGRATORY MOVEMENT OF AGRICULTURE AND LIVESTOCK FARMERS IN BRAZIL



European immigrants who settled in Brazil from the second half of the 19th century, facing the challenges of the "new land," were responsible for innovations that contributed greatly to the evolution of Brazilian agriculture, such as no-till farming, soil fertility management, and the generation of varieties adapted to the local conditions - including corn, soybeans, wheat, cotton, and sugarcane.

Along the past decades, these farmers and cattle raisers, who initially settled in the South and Southeast, began to move toward the Midwest and, more recently, toward the Northeast of the country, working in extensive cattle breeding and production of grains and tropical fruits. This migratory movement shaped the pioneering spirit in exploring the country, adapting and adopting new technologies, developing Brazil's countryside through agribusiness.

**1954**

Development of the **genealogical record of dairy herd and promotion of genetic improvement** with the creation of an association of cattle breeders in the southern region of the country.

**1958**

Creation of the **first agricultural school and of experimental fields** with the Castrolanda cooperative, which years later also created the Training Center for Milk Producers (CTP), for training and development of human resources for the dairy herd sector.

**1969**

**Creation of the Sugarcane Technology Center, today the world's largest sugarcane germplasm bank** (CTC - Centro de Tecnologia Canavieira), by the Cooperative of Sugarcane, Sugar, and Alcohol Producers of the State of São Paulo (Copersucar). The CTC developed a **genetic improvement program with more than 80 varieties of sugarcane**. Additional investments in satellite imaging technology to support the precision agriculture program and provide better crop forecasts.

**1974**

Creation of COODETEC - Central Cooperative for Agricultural Research Ltd. - which managed a **genetic improvement program (wheat, soy, corn, and cotton), a germplasm bank that has developed more than 200 new seeds and also 5 research centers** with more than 900 hectares of experimental fields. COODETEC was founded as a Research and Development Department of OCEPAR (Organization of the Cooperatives of the State of Paraná) to foster the research of state institutes.

**1984**

**Adaptation of the no-till farming system to Brazil's tropical soil** through the creation of the ABC Foundation, financed by contributions from producers of three cooperatives in the South of the country (Arapoti, Batavo, and Castrolanda). The foundation established agreements with the Brazilian Agricultural Research Corporation (Embrapa) and other research institutes to disseminate the technology to other regions of the country.

**1993**

Research in genetics, biotechnology, and plant breeding with the creation of the **Mato Grosso Agriculture and Livestock Research Support Foundation**.

**2005**

**Creation of the Soy Culture Support Fund** to foster soybean production through mandatory contributions for research, from soy producers in the Midwest region.



## INTEGRATED PRODUCTION SYSTEM

### BETWEEN LIVESTOCK FARMERS AND AGROINDUSTRY

From 1960, a system called "integration" in poultry and pork breeding starts to be developed in Brazil, in which operations are coordinated vertically based on agribusiness. It fostered improvements in the productive chain, such as better zootechnical indexes in the breeding stage, the modernization of slaughter and meat processing systems, as well as increased efficiency in the logistics of distribution of supplies and production.

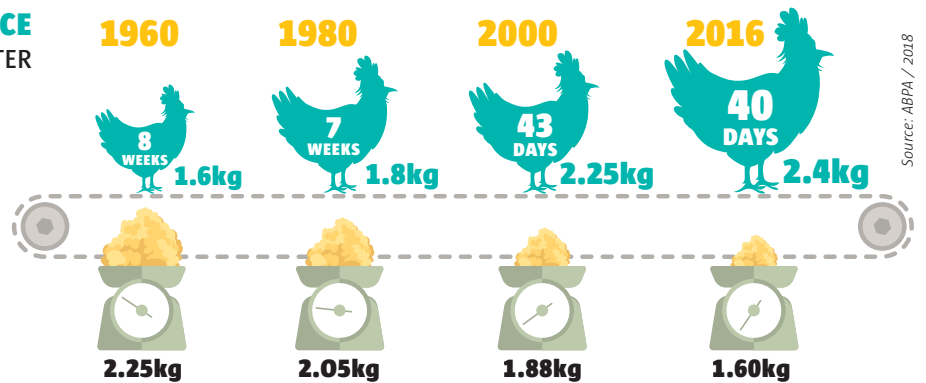
This organization also strengthened producers and generated gains of scale that have consolidated Brazil among the world's largest producers and exporters of poultry and pork. In the integrated system, the farmers provide the productive structure. In return, the integrating agroindustry provides the animals, feed, technical assistance, and pays the logistic costs.

**The possibility of having a complete production's traceability is one of the main advantages of the integration system.**

### EVOLUTION IN CHICKEN PERFORMANCE FOOD CONVERSION X BODY WEIGHT X SLAUGHTER

With genetic improvement and nutritional aspects, promoted by technological advances over the last decades, it has been possible to provide greater weight gain for chickens in proportionately smaller terms.

In addition, today there is also the precise quality control of the ambience, as well as the rigid monitoring of all aspects that guarantee the sanity of the animals throughout the process of creation.



**130,000**  
FAMILIES OF INTEGRATED PRODUCERS THROUGHOUT BRAZIL

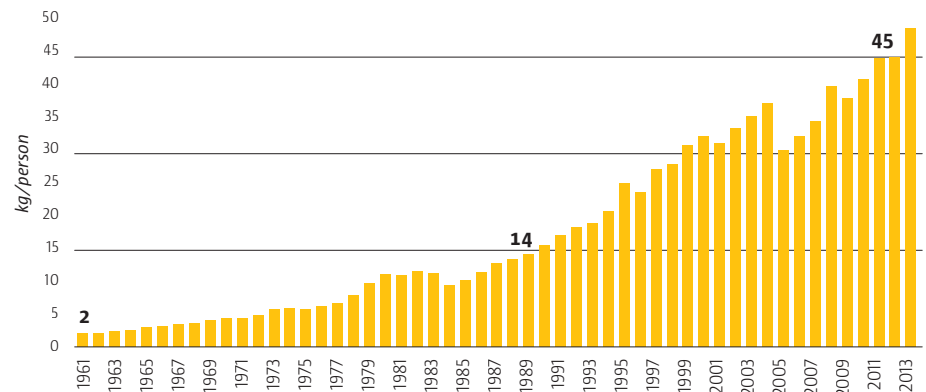
**13.1 MILLION TONNES**  
CHICKEN MEAT PRODUCTION IN BRAZIL (33% FOR EXPORT)

**3.7 MILLION TONNES**  
BRAZILIAN SWINE PRODUCTION (18.7% FOR EXPORT)

Source: ABPA / 2017

### EVOLUTION OF THE DOMESTIC SUPPLY - CHICKEN MEAT

Source: FAO / 2018



The discoveries and innovations in agricultural sciences ensured the increased productivity of Brazilian crops and contributed to the gradual decrease in the cost of staple foods, with research in several areas such as chemistry, physics – soil fertility, plant physiology, crop management, pest disease and weed control, nutrition, and animal health, genetics, agricultural meteorology, irrigation, among others.

### INDEX OF ACTUAL PRICE OF STAPLE FOODS

Source: MAPA / Prepared by MBAgro

