

# TROPICAL LIVESTOCK



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MINISTERIO DE  
**AGRICULTURA  
Y GANADERÍA**



# MERCOSUR: BIGGEST WORLD CATTLE HERD (30% Global Cattle Herd/ Tropical)

## CATTLE HERD (N)

- ✓ Brasil: 224.900.000
- ✓ Argentina: 53.100.000
- ✓ Paraguay: 13.800.000
- ✓ Uruguay: 11.800.000

**TOTAL 303.600.000**



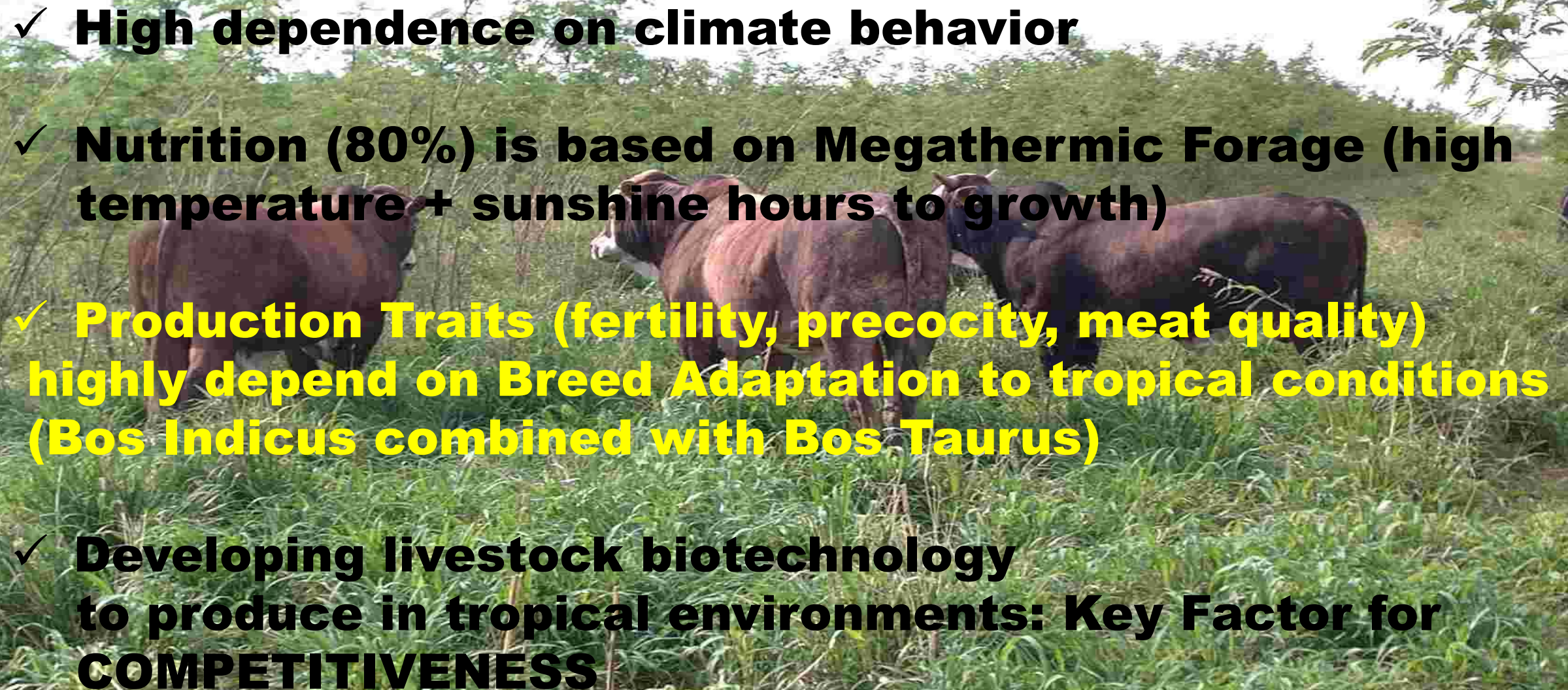
# MERCOSUR: BIGGEST WORLD BEEF EXPORT (32% Global Trade)

	<u>TONS (cwe)</u>
✓ Brasil:	1.850.000
✓ Argentina:	210.000
✓ Paraguay:	390.000
✓ Uruguay:	385.000

**TOTAL 2.835.000**



# Key Facts in Tropical Livestock Production

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- ✓ **High dependence on climate behavior**
  - ✓ **Nutrition (80%) is based on Megathermic Forage (high temperature + sunshine hours to growth)**
  - ✓ **Production Traits (fertility, precocity, meat quality) highly depend on Breed Adaptation to tropical conditions (Bos Indicus combined with Bos Taurus)**
  - ✓ **Developing livestock biotechnology to produce in tropical environments: Key Factor for COMPETITIVENESS**

Source: Glatzle (2006)



# LIVESTOCK in PARAGUAY







Western



## Western Region or CHACO (62%)

- ✓  $\approx$  Size New Zealand
- ✓ **< 3% population**
- ✓ **Livestock (45%):**

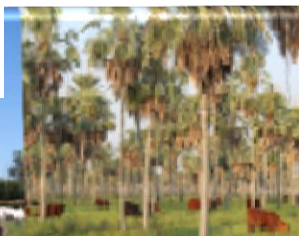
Eastern



**Surface Area: 406.752 km<sup>2</sup>**  
**Population: 6.568.000**  
✓ **50%=15-49** year-old  
✓ **37% <15** years old  
**MILLENIUM ASSETS:**  
**FOOD+WATER+ENERGY**

## Eastern Region (38%)

- ✓  $\approx$  Size United Kingdom
- ✓ **97% population**
- ✓ **Agriculture (99%) + Livestock (55%)**



# Snapshot of the Beef Industry in PARAGUAY



**12.4% GDP  
as Value Chain**

**National Herd**  
**13.8** Mill Head  
**153,084** producers

**>400,000 jobs**  
(11% EAP)

**Grazing Area:** 16.2 Mill Has  
**Stocking Rate:** 1.2 Has/Head

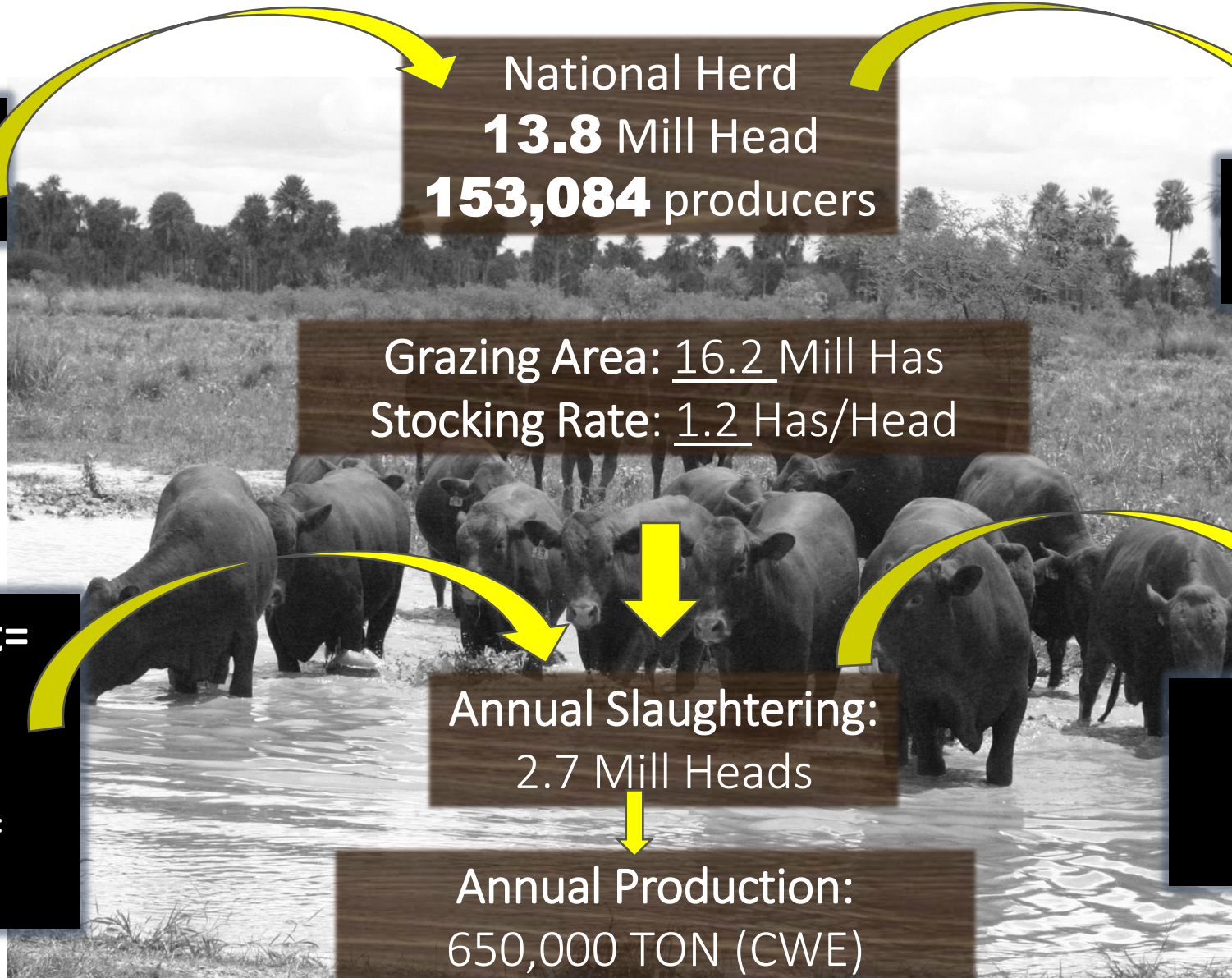
**Exports (62%):**  
400,000 TON  
(cwe)

**Internal Market=**  
**(38%)**  
Per capita  
consumption =  
36 kg/year

**Annual Slaughtering:**  
2.7 Mill Heads

**Annual Production:**  
650,000 TON (CWE)

**18 Packing Plants**  
**92 Open Markets**  
**5 Continents**





# **Ideal Conditions for Megathermic Forage Production**

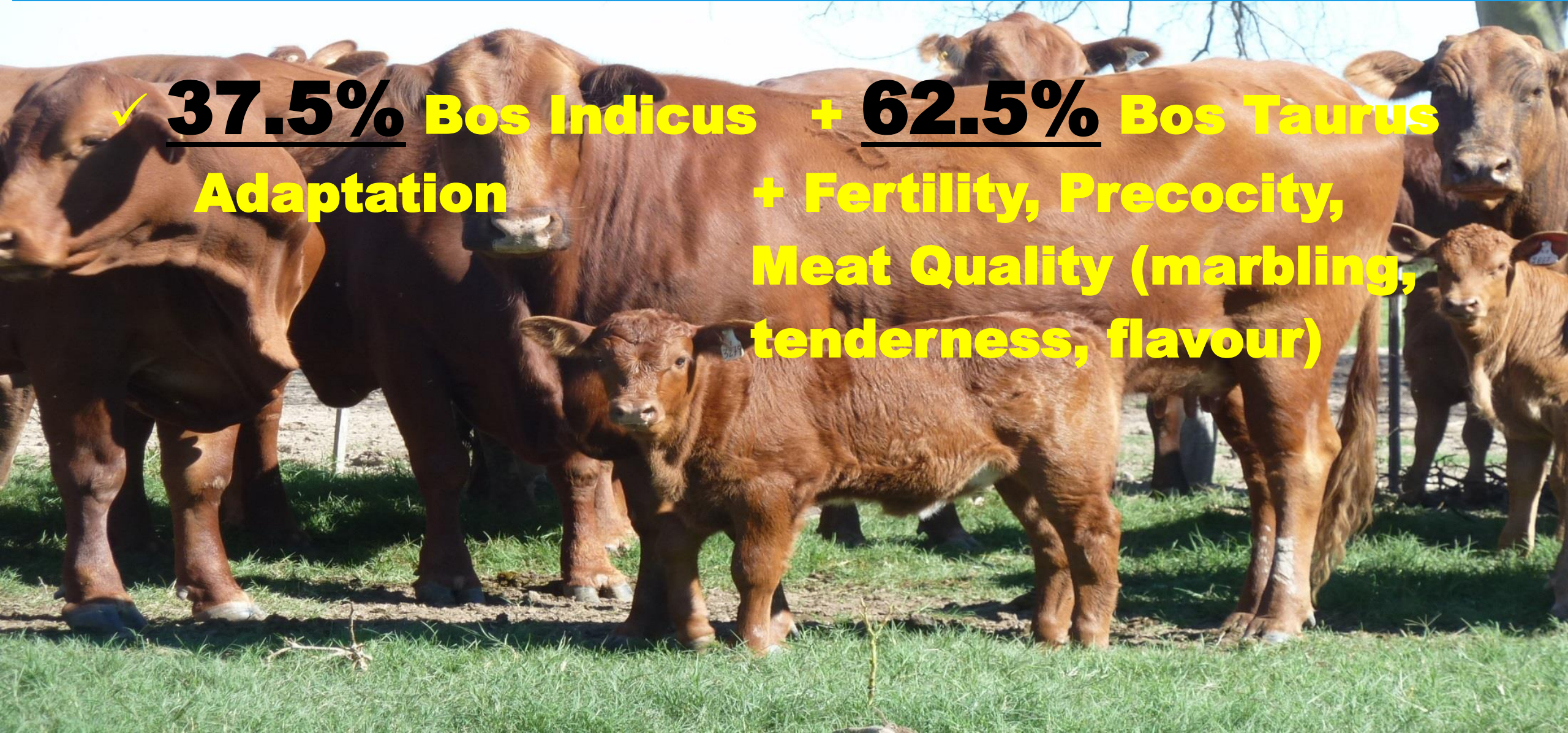


- ✓ **Average yearly temperature 24 degrees Celsius**
- ✓ **Average yearly rainfall : 1.200 mm (48 inches)**



# 70 years Paraguay developing adapted genetics to produce in Tropical Environments

✓ **37.5% Bos Indicus + 62.5% Bos Taurus**  
**Adaptation** + **Fertility, Precocity,**  
**Meat Quality (marbling,**  
**tenderness, flavour)**



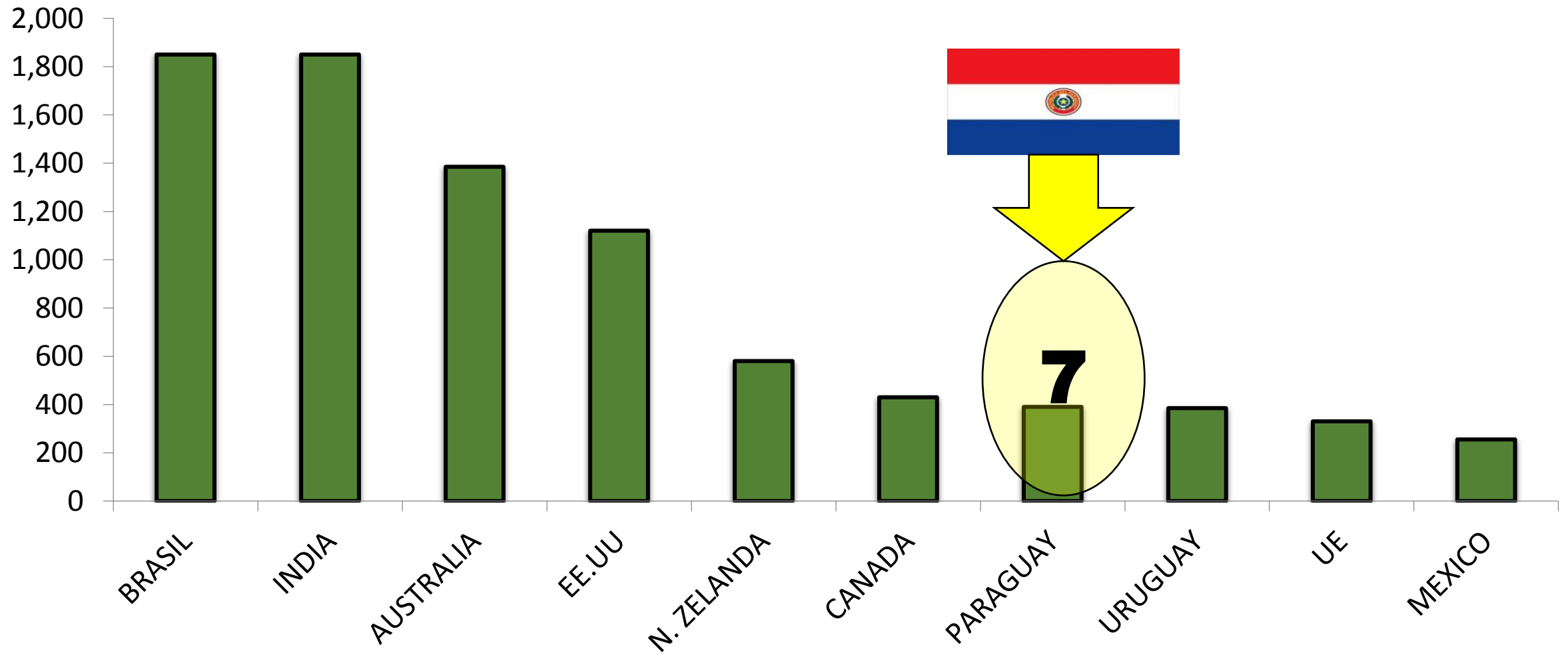


# **Beef Industry in Paraguay from 2000 – 2016:**

- ✓ **National Cattle Herd grew by 49%**
- ✓ **Annual Slaughtering increased 4x**
- ✓ **Exports (TON/CWE) incremented 6x**
- ✓ **Exports Value (US\$) beef and by products raised 21x**

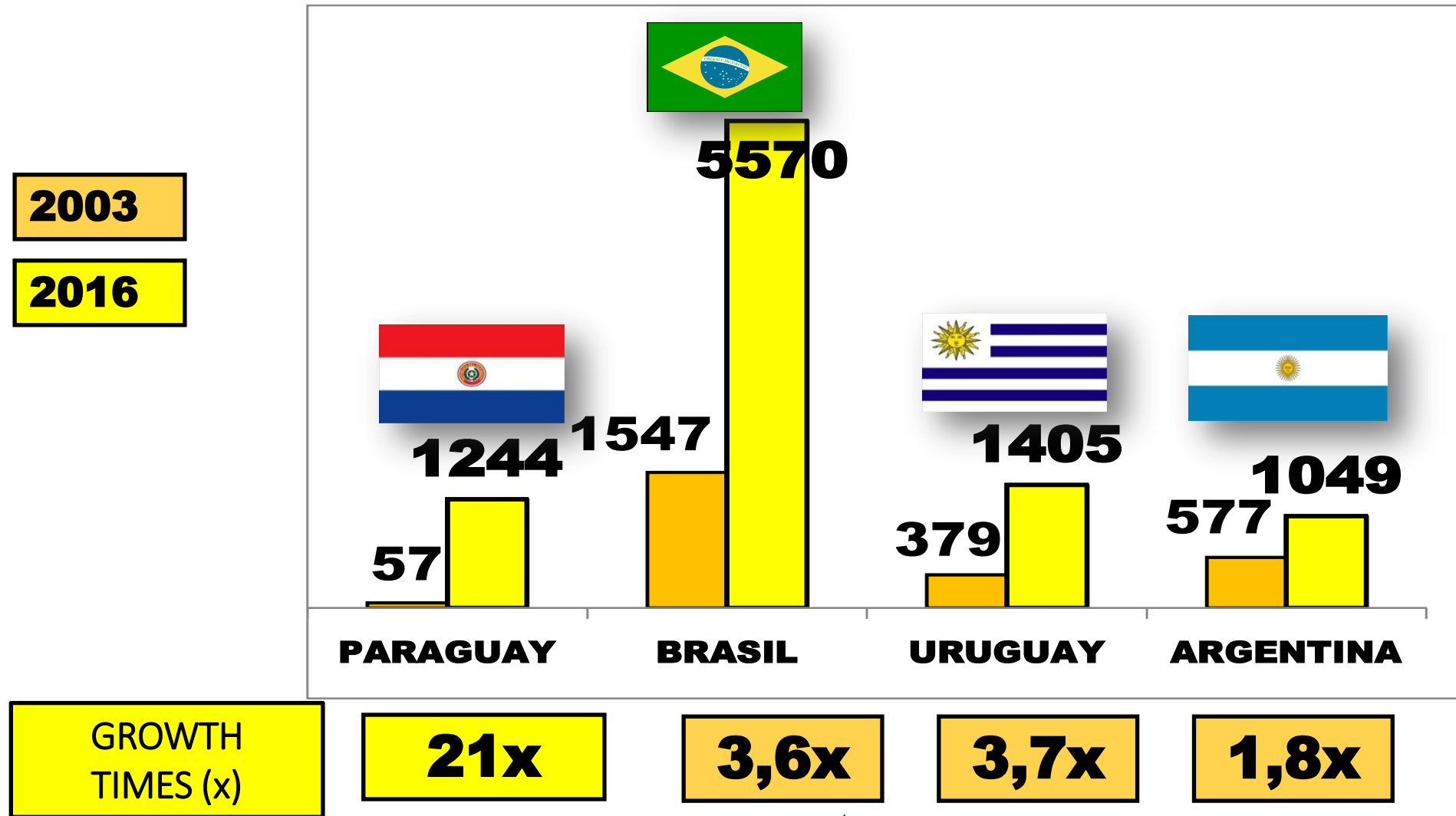


# Top 10 World Beef Exporters (‘000 TON CWE) 2016



(Source: USDA, 2016)

# Beef Export Growth in the MERCOSUR Years 2003 vs 2016 (US\$ Millions)



(Fuente: Senacsa, 2014, IPCVA 2014, INAC 2014; MAPA, 2014)

# **Use Biotechnology Key Factor**

- ✓ **Animal Health (FMD control and Eradication)**
- ✓ **Use of Megathermic Forage**
- ✓ **Development Adapted Genectics**
- ✓ **Use Assisted Reproductive Technology**
- ✓ **GMOs (soybean, corn strategic use)**







# **Paraguay Livestock Systems:**

- **By Law: 25% Native Forest Reserve (NFR)**
- **+ 20% of runners and islands of forest = 45% NFR**
- **Promote use of Biotechnology**
- **Encourage Appropriate stocking**
- **Do Not sacrifice biodiversity**
- **GHG Minimum contribution (CO2 Emission – Capture)**
- **DO Not degrade soils**
- **REPRESENT Nature in Production**  
**within a diverse landscape**



A group of approximately ten brown and white cows are standing in a grassy field. They are positioned behind a rustic wooden fence made of horizontal logs. The cows have white faces and chests with brown patches on their bodies. Some have yellow ear tags. The background is a lush green field with trees and a clear blue sky.

# **FINAL CONSIDERATIONS**





# Paraguayan Beef Industry 2025 Objective

- ✓ **Become 5th Beef World Exporter at least 600.000 TON Exportable Balance**
- ✓ **BIOTECH = KEYSTONE**





# **FUTURE BIOTECHNOLOGY FOR TROPICAL LIVESTOCK**

## **✓ DNA Biotechnology**

- Rastrability**
- Genetic Markers for selection**

## **✓ Molecular Biotechnology**

- Animal diseases Diagnosis and Epidemiology**
- Development of specific vaccines to differentiate disease/vaccine antigens (i.e FMD)**

## **✓ Cloning and Genetic Modified Animals**

## **✓ Nanobiotechnology for animal drugs use**

# **PARAGUAYAN GOVERNMENT**



**ACKNOWLEDGE AND RECOGNIZES THE  
THE IMPORTANCE OF BIOTECHNOLOGY  
FOR THE SOCIAL AND ECONOMIC  
DEVELOPMENT OF OUR NATION**



# Biotech has transformed PARAGUAY TOP TEN WOLRD EXPORTER

**EXPORT**



**1<sup>st</sup> Electric Energy**

**1<sup>st</sup> Organic Sugar**

**2<sup>nd</sup> Yuca**

**2<sup>nd</sup> Stevia**

**3<sup>th</sup> River Barge Fleet**

**3<sup>th</sup> Yerba Mate**

**4<sup>th</sup> Soy Bean**

**4<sup>th</sup> Yuca Starch**

**4<sup>th</sup> Soy Bean Oil**

**5<sup>th</sup> Chia**

**7<sup>th</sup> Beef**

**7<sup>th</sup> Corn**

**10<sup>th</sup> Wheat**

**10<sup>th</sup> Sesame**

**10<sup>th</sup> Rice**



**PARAGUAY Produces Food  
100 million People in the World**





**LIVESTOCK** has become the  
symbol of **PARAGUAY** as an  
**Honest and Prosperous Country**



**FEEDING THE WORLD** is an  
**OPPORTUNITY** but also



**IS OUR COMMITMENT &  
RESPONSIBILITY**





# **The Best Beef In The World**





**Thanks!**  
**Gracias!**

