

Meeting **World Food Needs** with **GM Rice?**

**Brief Description of the
Colombian Rice Sector**

GM Rice Research Group
Alvaro Durand-Morat
Fundacion Proarroz
October 2012



DIVISION OF AGRICULTURE
RESEARCH & EXTENSION

University of Arkansas System



© 2012 Google
US Dept of State Geographer
© 2012 MapLink/Tele Atlas
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
20°02'26.71" S 64°50'43.09" W elev 8396 ft

Google earth

Eye alt 7550.73 mi

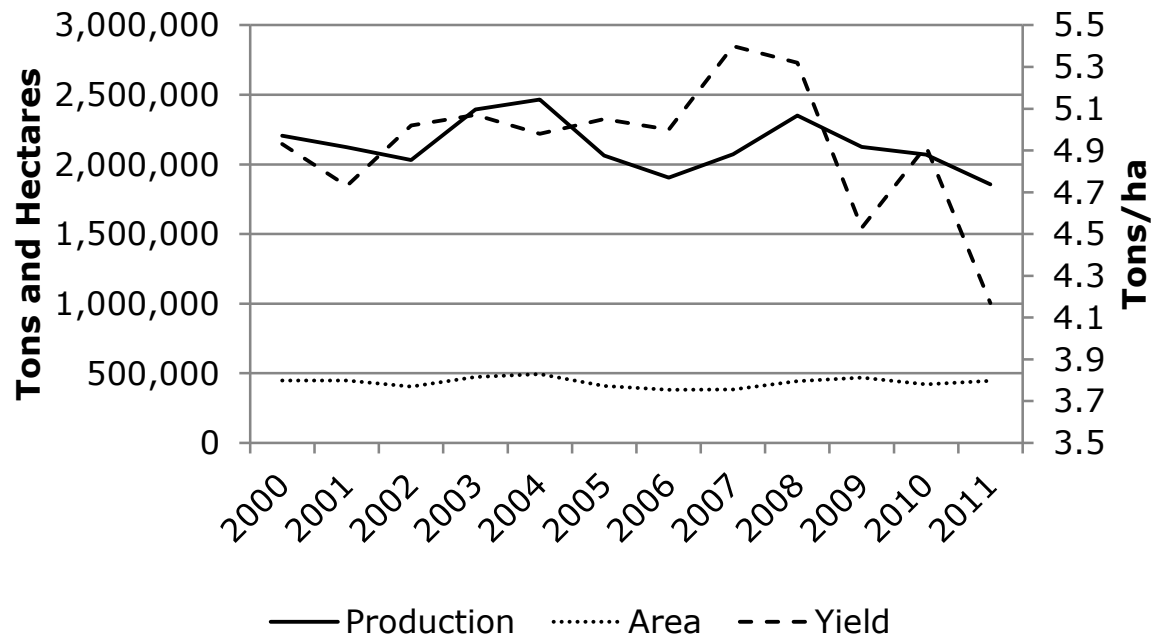
UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Meeting World Food Needs
with GM Rice?

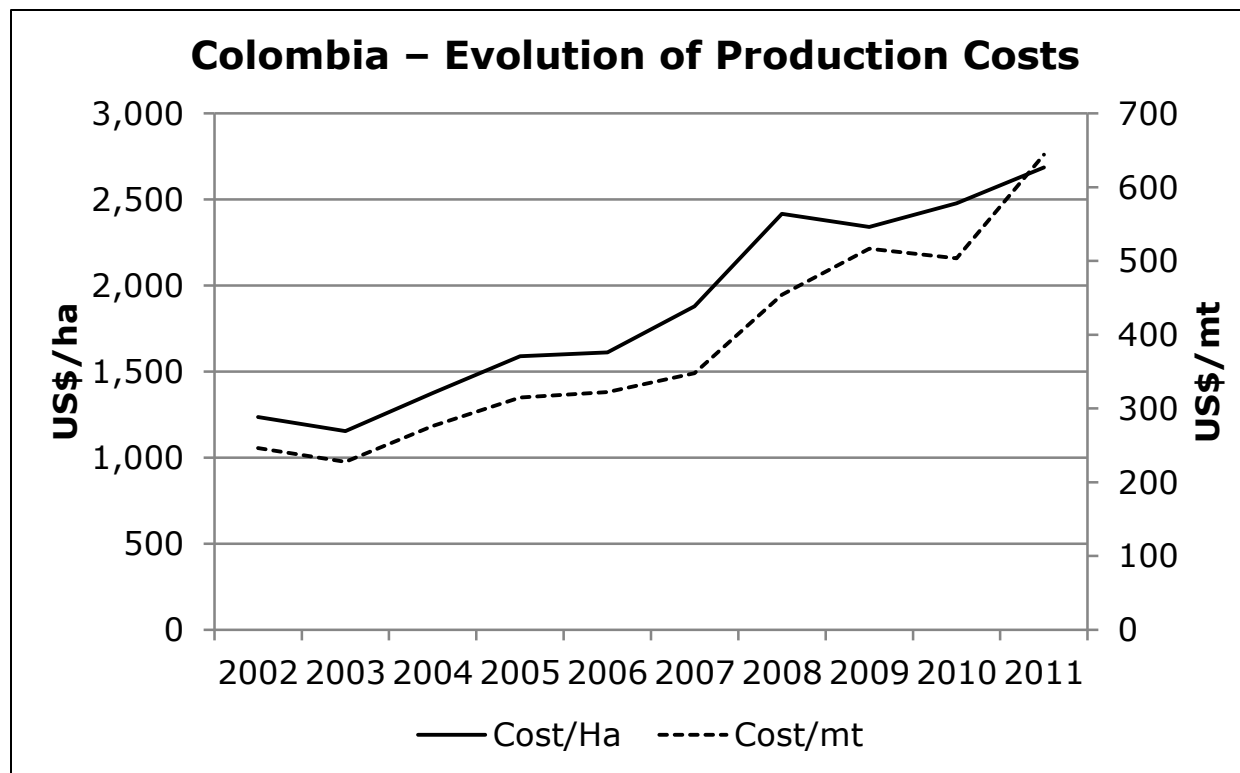


- Colombia is the 4th largest rice producer in the Western Hemisphere (after Brazil, the U.S., and Peru).
- According to the III Rice Census held in 2007 there were some 21,800 rice producers
- Produces two crops per year. The main or 1st semester crop is planted from January to June, and accounts for ~2/3 of annual acreage and output. The secondary or 2nd semester crop is planted from July to December
- Two production systems with very different productivities:
 - Mechanized: accounts for 96% of the national area and 99% of the national volume of production, generating average yields of 4.9 mt
 - manual: accounts for 4% of the area and 1% of the volume, generating average yields of 1.7 mt

Colombia - Evolution of Rice Production



- Ranks 7th in productivity (4.9 mt/ha) in the Western Hemisphere (after the U.S., Uruguay, Peru, El Salvador, Argentina, and Chile)
- High production cost, more than doubling that observed across the Western Hemisphere

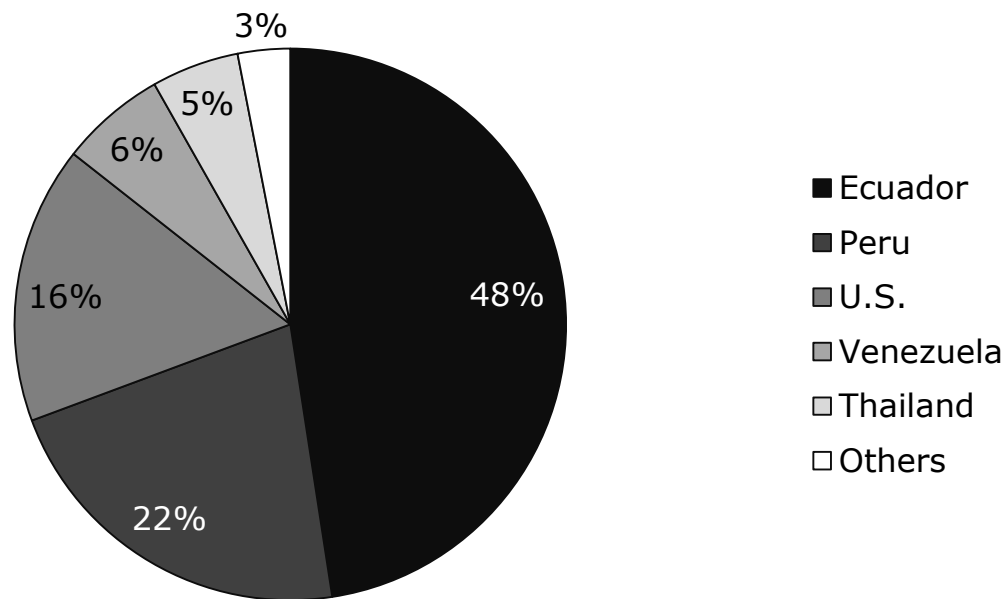


- Colombia is a net importer of rice with a highly volatile behavior depending on the evolution of domestic production
- Highly protected market enables to maintain prices at levels much higher than in the international market

Colombian rice imports by year and milling degree

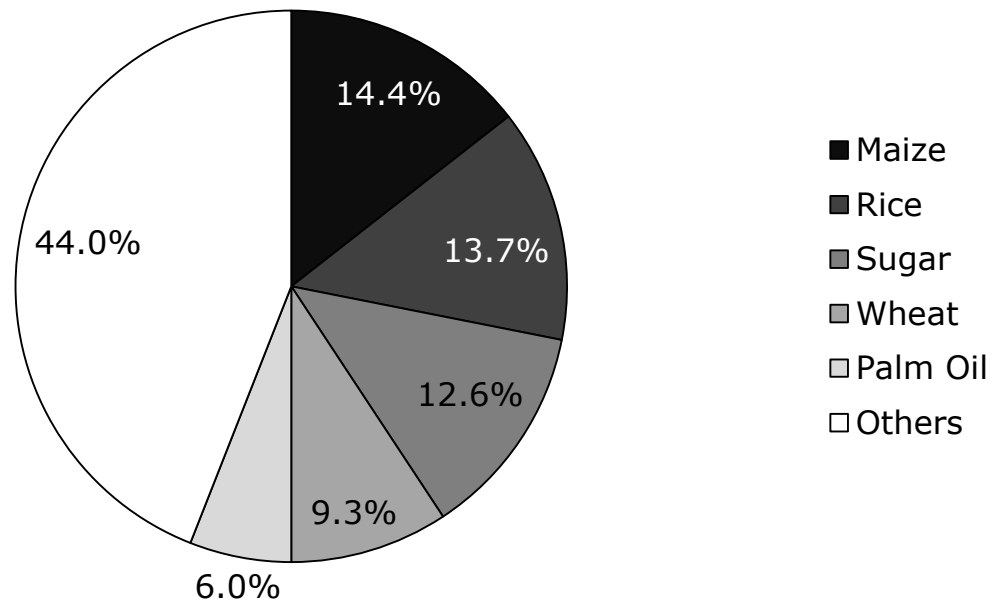
Year	10.06.10	10.06.20	10.06.30	10.06.40	Grand Total
2004	5,268	2,418	74,538	3,518	85,742
2005		1	31,753	357	32,111
2006	11	1	191,699	5,316	197,027
2007		2	122,913	12,341	135,257
2008	5		23,202	6,332	29,539
2009	62,773		56,588	2,939	122,300
2010		1	6,297		6,298
2011	574	4	33,362		33,940
2012	8	1	23,916		23,925

Composition of Imports by Origin



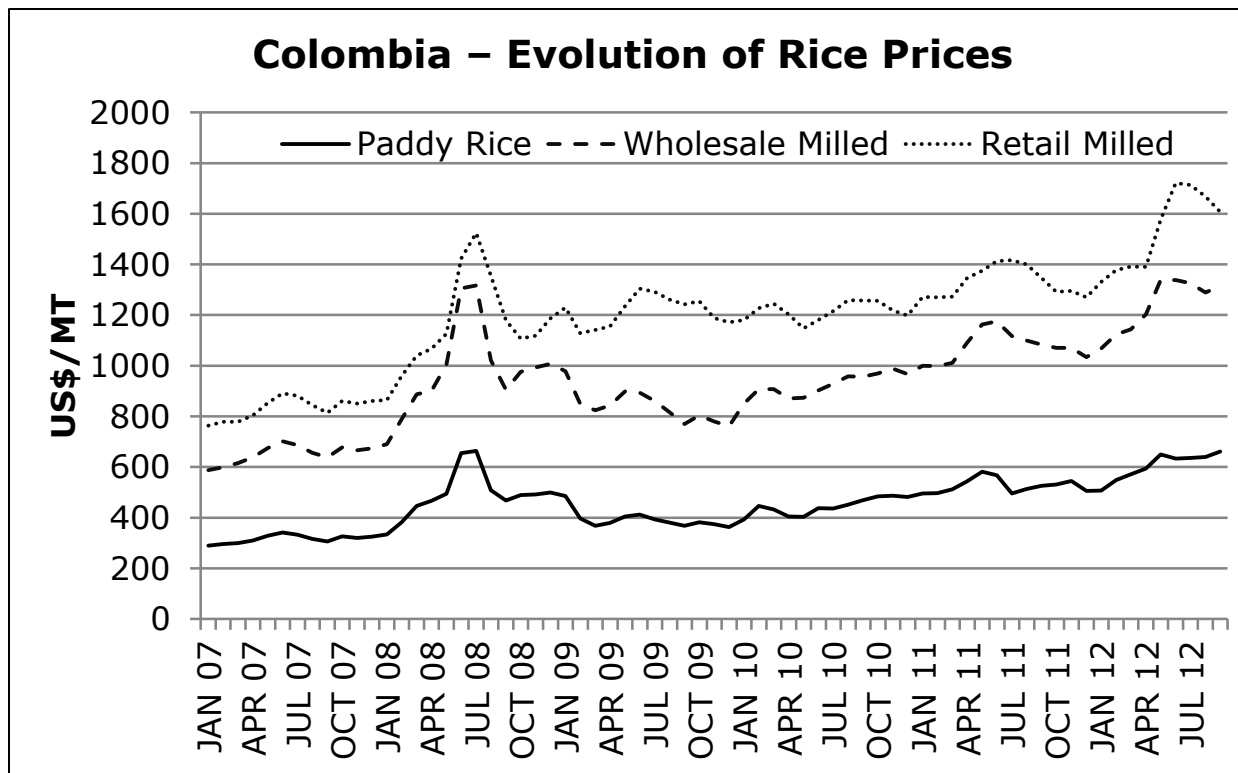
- Rice is a staple in Colombia, contributing about 14% of the caloric intake
- All consumption is of long grain type
- Broken rice is demanded by the brewing industry while bran is used for feed
- Estimations suggest that rice demand is elastic with respect to own price (-0.94) and highly elastic with respect to income (2)

Colombia - Food Supply (Kcal/person/day)



- Rice producer prices in Colombia are the highest in the Western Hemisphere
 - Twice higher than Brazil
 - Near three times higher than Argentina and Uruguay
 - More than twice higher than Peru, with which trade is supposedly free under ASEAN
- The high prices are passed entirely to consumers

Colombia – Evolution of Rice Prices



- Colombia grants a high level of protection to the rice sector → 80% ad-valorem import tariff on paddy, brown, and milled rice
- Preferences for MERCOSUR countries through back-loaded tariff reduction schemes that will eliminate import tariffs by 2018
- Preference to the U.S. through Trade Promotion Agreement of 2012
 - 19 year tariff reduction schedule (grace period of 6 years)
 - TRQ with an initial volume of 79,000 mt milled equivalent and an annual increase of 4.5%, unlimited by year 19

- The most relevant sectoral institutions are:
- FEDEARROZ: the leading rice producer association
- INDUARROZ and MOLLIARROZ: two associations representing the interests of millers
- MINISTER OF AGRICULTURE AND RURAL DEVELOPMENT

- According to ISAAA, Colombia ranks 18th in the world in the adoption of GM crops in 2011
- There are 3 national authorities in charge of administering the Cartagena Protocol:
 - The Ministry of Agriculture through the Instituto Colombiano Agropecuario, ICA: regulation of GM products for agricultural, forestry, and fishery purposes
 - The Ministry of Environment, Housing, and Development: regulation of GM products for environmental purposes
 - The Ministry of Social Protection: regulation of GM products for health and food purposes

- Three technical committees (one per national authority) in charge of advising the national authorities in the approval process for the introduction and use of GM materials
- Each committee has its own procedure of the evaluation process

Number and types of decisions made regarding GM products

Product	Type of Decision				
	Release to the Environment	Use as Food or Feed	Contained Use	Involuntary Movement	Research
Cotton	14	7	0	0	0
Rice	0	2	0	0	1
Corn	21	14	0	0	0
Sugar beet	0	1	0	0	0
Soybean	1	2	0	0	0
Wheat	0	1	0	0	0
Vaccines	2	0	0	0	0
Rats	0	0	2	0	0
Others	1	0	0	0	0
Total	39	28	0	0	0

Source: Biosafety Clearing-House Colombia. At <http://www.bch.org.co/biosecuridad/index.jsp>

- The decisions regarding rice entail:
 - The approval of rice products containing two Liberty Link events (LLRICE62 and LLRICE601) for human consumption
 - The authorization granted to CIAT for the importation of mutant lines with T-DNA insertion

Meeting **World Food Needs** with **GM Rice?**



Brief Description of the Argentinean Rice Sector

GM Rice Research Group
Alvaro Durand-Morat
Fundacion Proarroz
October 2012



DIVISION OF AGRICULTURE
RESEARCH & EXTENSION

University of Arkansas System



© 2012 Google
US Dept of State Geographer
© 2012 MapLink/Tele Atlas
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
20°02'26.71" S 64°50'43.09" W elev 8396 ft

Google earth

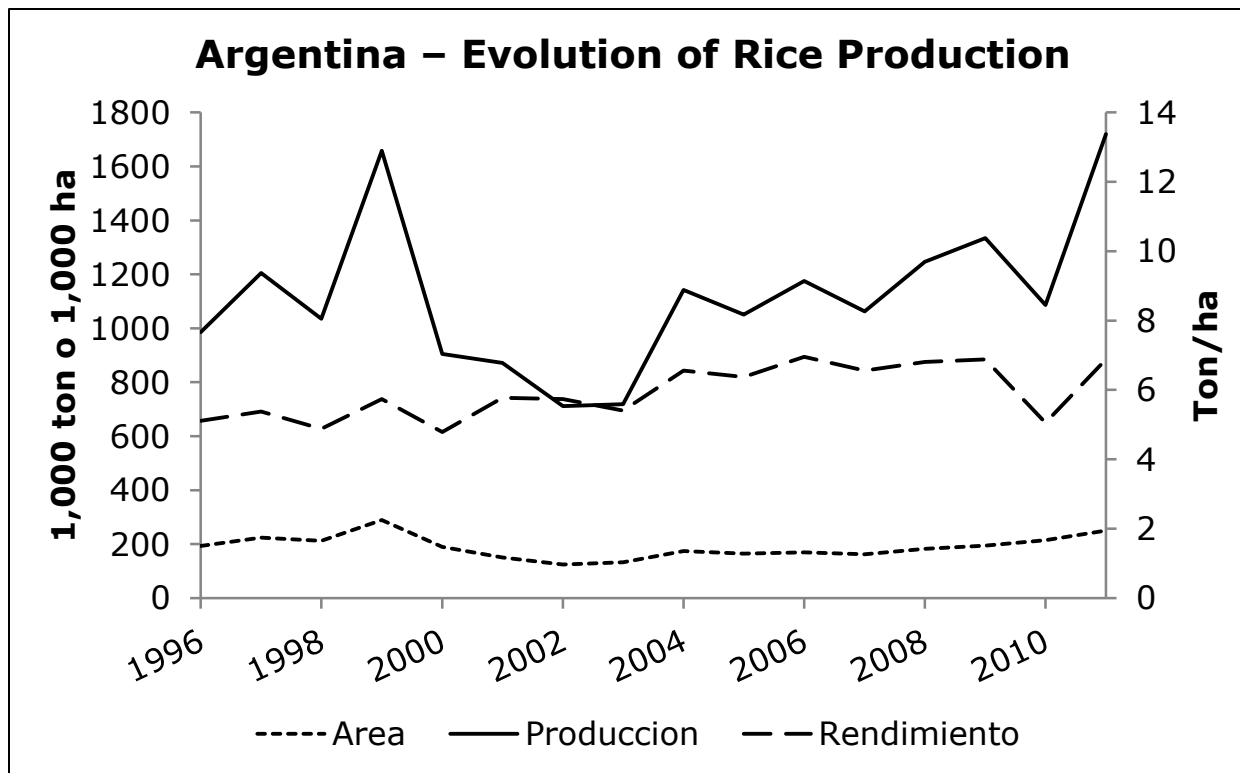
Eye alt 7550.73 mi

UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

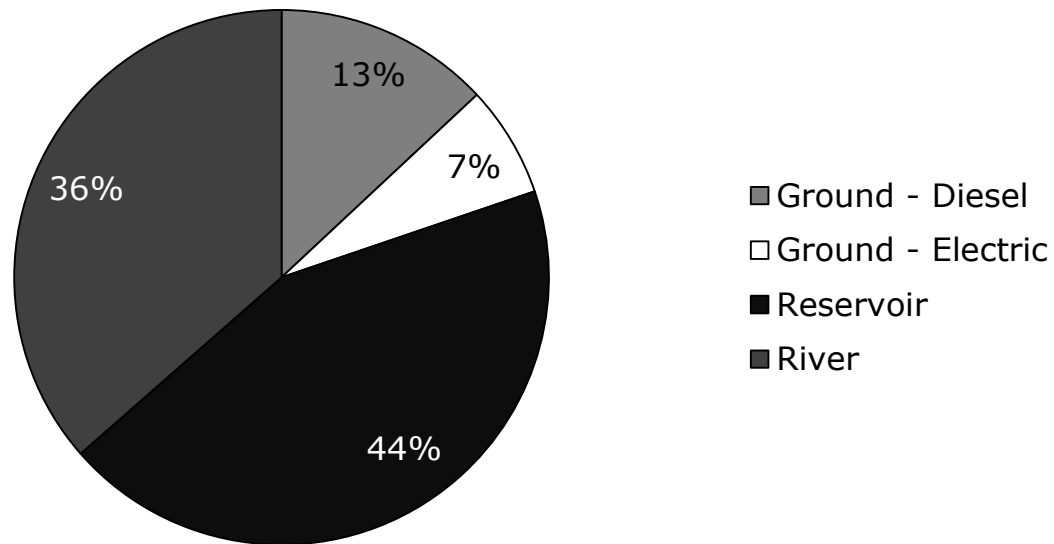
Meeting World Food Needs
with GM Rice?



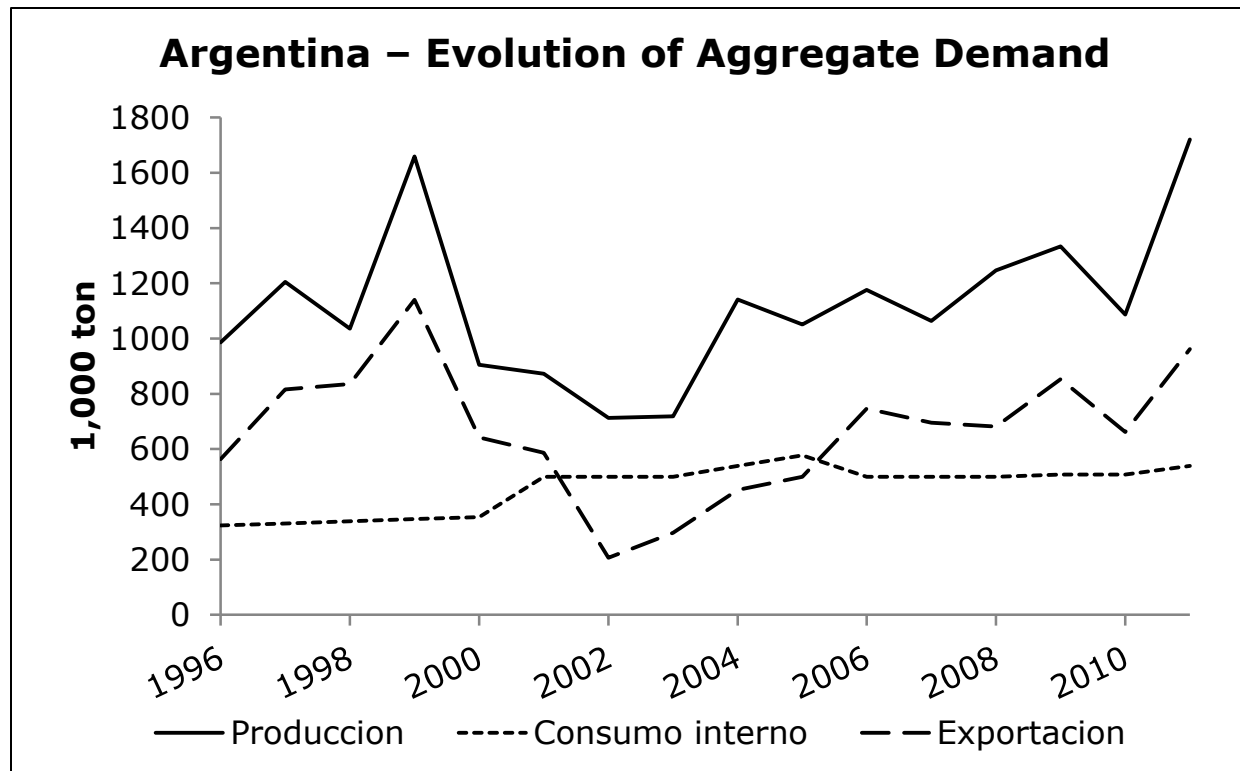
- Argentina is the 4th largest rice producer in the Western Hemisphere (after Brazil, the U.S., Peru, Colombia, and Uruguay). There are approximately 500 rice producers
- Produces a single crop per year, which is harvested between February and April
- Ranks 5th in productivity (estimated at 6.8 mt/ha) in the Western Hemisphere (after the U.S., Uruguay, Peru, and El Salvador)
- Rice production is concentrated in the Eastern part of the country, with the provinces of Corrientes and Entre Rios accounting for over 75% of the production
- Surface water is the main irrigation system



Argentina – Rice Area by Irrigation Source



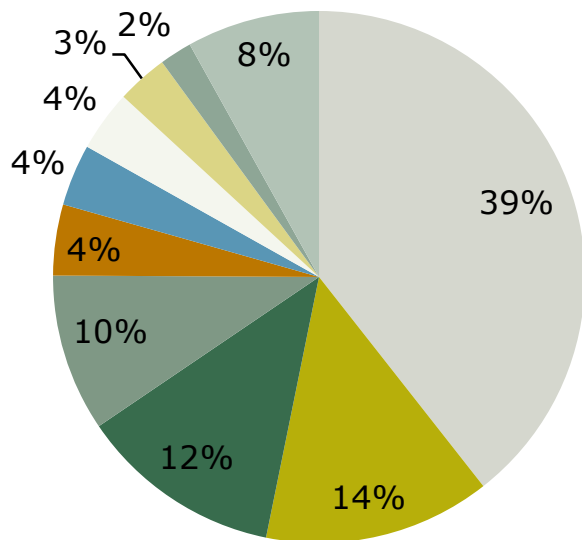
- Highly dependent on international market (more than half is exported)
- Slow growth and volatility of the domestic market
- High volatility of exports



- **Record of exports in 2011**

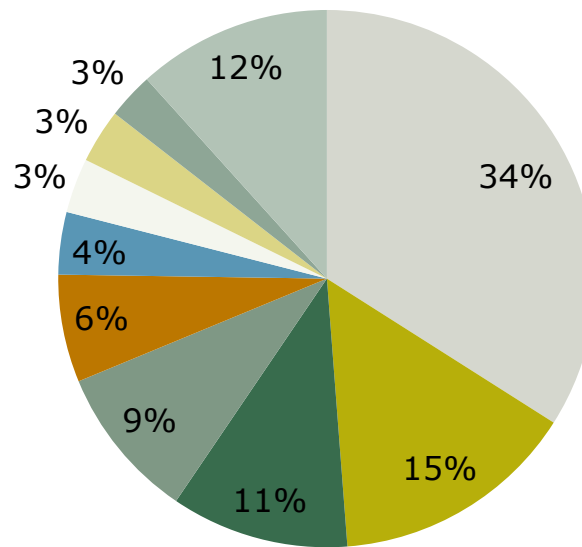
- Volume: 986,761 tons (paddy basis)
- FOB Value: US\$ 371.4 millions
- # of destinations: 40

Volumen



- | | | |
|----------|----------------|--------|
| ■ Brasil | ■ Venezuela | ■ Iraq |
| ■ Chile | ■ Angola | ■ Perú |
| ■ España | ■ Países Bajos | ■ Cuba |

Valor



- | | | |
|----------|-------------|----------------|
| ■ Brasil | ■ Venezuela | ■ Iraq |
| ■ Chile | ■ Senegal | ■ Angola |
| ■ Perú | ■ España | ■ Países Bajos |

- According to ISAAA, Argentina ranks 3rd in the world in the adoption of GM crops in 2011, with an estimated 23.7 million hectares.
- The primary GM crops are soybean, corn and cotton
- Argentina was the first country in Latin America to implement a system for the evaluation of biosafety of GM crops
- The Ministry of Agriculture has the sole authority of approving the introduction of GM crops, based on the advice of three institutions:
 - CONABIA (National Advising Commission on Agricultural Biosafety): in charge of environmental risk assessments
 - SENASA (National Sanitary Service): in charge of assessing the safety of GM products for use as food and feed
 - Agricultural Marketing Bureau: in charge of assessing the market impact of GM crops