

FOOD, FUEL AND FORESTS

IPC - ALARN SEMINAR ON CLIMATE CHANGE,
AGRICULTURE AND TRADE

BIOFUEL TRENDS IN LATIN AMERICA

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STRATEGIES: MAIN DRIVERS

DRIVERS	ARGENTINA	BRAZIL	CHILE
	Exporter	Former importer	Almost all imported
Diver. energy sources	2	1	1
Economic	1	2	2
Environment	3	3	3

BIOFUELS POLICIES

	ARGENTINA	BRAZIL	CHILE
Base for policies	Plenty supply natural resources High productivity	Plenty supply natural resources High productivity	Limitations on natural resources Less productivity
	Commercial policies	Initial goverment support	Intitutional limitations
	Net exporter until recently	Previous importer	Dependence on imports
Dated	Recently (2001)	Since 1975	2007?

BIOFUELS POLICIES: Argentina

- ✓ 2001 Tax exemption for biofuel (10 years)
- ✓ 2004 National Biofuel Program (studies, extension, no support)
- ✓ 2006 Biofuels Law and 2007 regulatory decree
 - ✓ 5% mandatory blends for gasoline and fuel oil since 2010
 - ✓ Tax exemptions on biofuels for consumption
 - ✓ Reduced period for VAT on investments and depreciations
 - ✓ Priorities: farmers, small firms, regional development
 - ✓ Standards and quality controls
- ✓ 2007 Differential export tax. Huge for biodiesel; not so much for ethanol produced with grains

Problems associated with domestic prices' controls on fuels

BIOFUELS POLICIES: Brazil

- ✓ 1975 PROALCOOL I **(Policies for sugar cane Ethanol)**
 - ✓ Support sugar mills to produce ethanol, investment in new mills
 - ✓ Mandatory blends. Ethanol standards
 - ✓ Government intervention (PETROBRAS, IAA) on prices and distribution
 - ✓ Support to the distribution system
- ✓ 1978-79 PROALCOOL II
 - ✓ Support to the development of E 100 distribution stations
 - ✓ Tax exemption to ethanol and to E 100 cars. Low fuel prices
- ✓ 1990 IAA was closed, cut supports; market prices; tax exemptions; mandatory blends
- ✓ 2003 Flex-fuel cars
- ✓ 2005 **Biodiesel Law**
 - ✓ Mandates minimum blends since 2008 (3% since July 2008)
 - ✓ Special taxation for different feedstocks

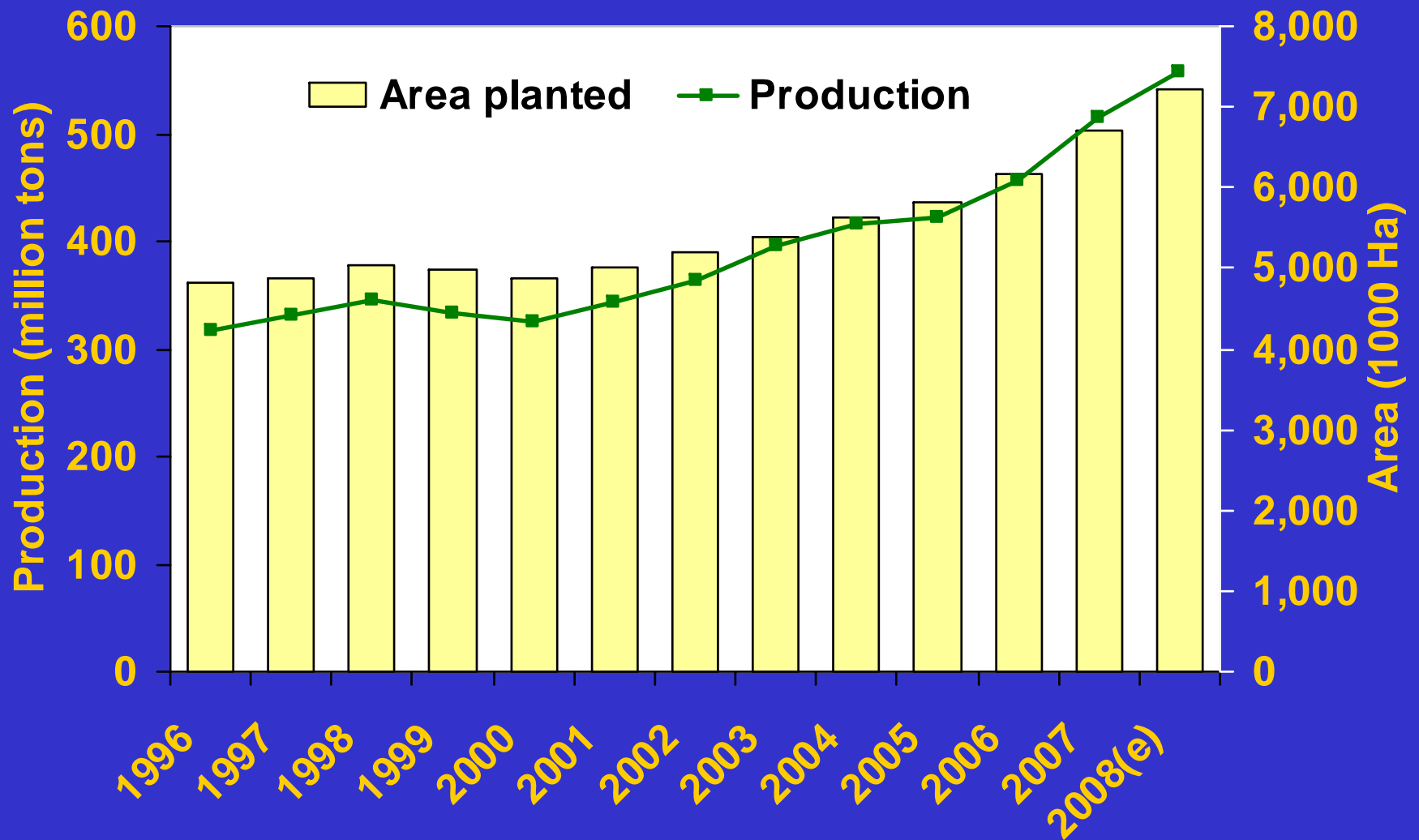
BIOFUELS POLICIES: Chile

- ✓ 98% of liquid fuels come from imported oil. Net importer of fuel-oil
- ✓ Current President committed to a goal of 15% energy use from renewables by 2010 (all sources)
- ✓ However, until 2008 very little support to biofuels:
 - ✓ Some competitive grants for start-up projects related to renewable energy production, including biofuels.
 - ✓ Gov't support to R&D on some crops (regional focus).
 - ✓ 2007 Gov't announced its intention to reduce taxes on biofuels blends

BIOFUELS PRODUCTION

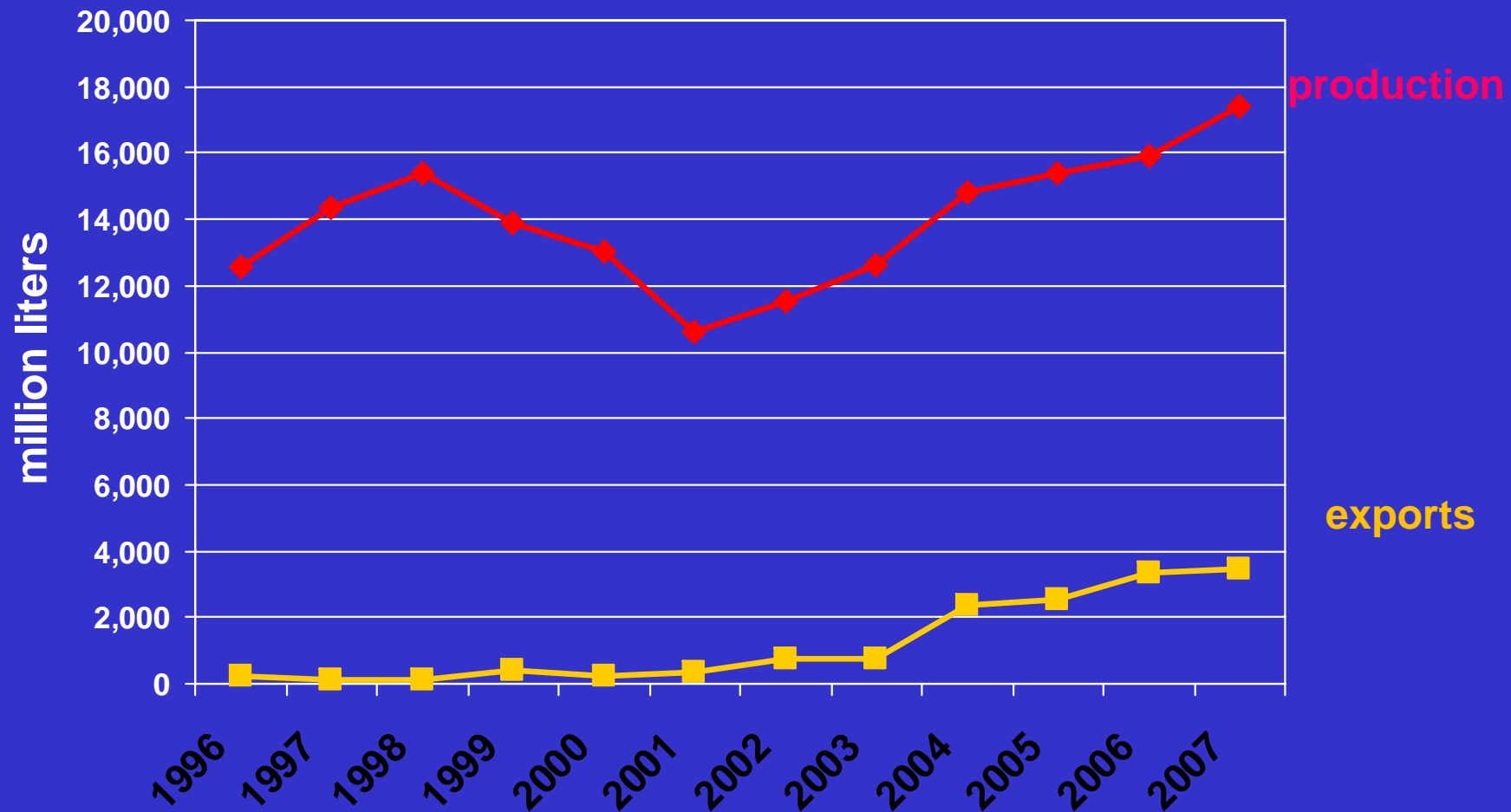
	ARGENTINA	BRAZIL	CHILE
Main feedstocks	Oilseeds Large firms	Sugar Large firms	Corn Small scale
Other feedstocks	Grains, sugar	Oilseeds	Oilseeds
Production feedstocks	High level of exports	High level of exports	No exports
Potential growth	High (land, productivity) 2004-06 77 MM ton 2015 122 MM ton grains & oilseeds	Huge (+ land, productivity) 2007/08 556 MM ton 2015 691 MM ton Sugarcane	Little (land restrictions) Potential: 170 thousand ha) Grains & oilseeds
Competitiveness	High biodiesel Medium ethanol	High ethanol Medium biodiesel	Low

SUGARCANE PRODUCTION IN BRAZIL



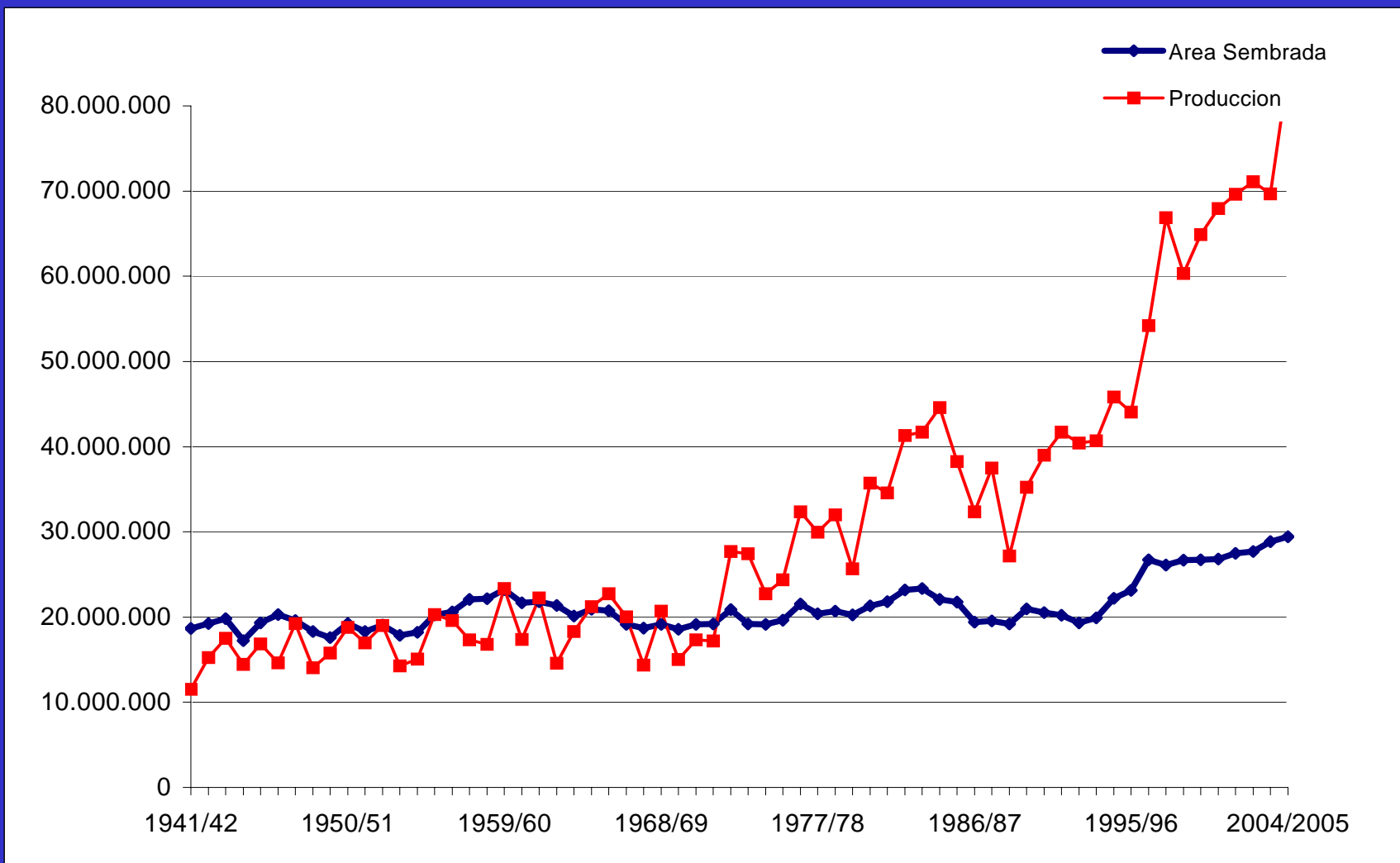
Source: IBGE. Elaboration: ICONE.

BRAZILIAN ETHANOL PRODUCTION AND EXPORTS



Source: UNICA. Elaboration: ICONE.

CEREALS AND OILSEEDS PRODUCTION IN ARGENTINA (hectares and tons)



Source: Regunaga, M. SAGPYA data

IMPACT ON RURAL DEVELOPMENT

	ARGENTINA	BRAZIL	CHILE
Global price impact	Positive	Positive	Low
Large scale	Biodiesel export	Sugar ethanol	-----
S & M scale	Sugar ethanol Grains & oilseeds	Oilseeds	Grains & oilseeds
Regional initiatives	Law benefits	Biodiesel Law	Not relevant

CHALLENGES FACED BY THE SECTOR: Argentina

- ✓ Controls on domestic fuel prices. Competition to domestic sales of biofuels
- ✓ Controls on feedstock domestic markets (taxes, maximum prices, quantitative restrictions): limits to innovations and to land acreage expansion to marginal areas
- ✓ Changes in differential export taxes
- ✓ Lack of adequate infrastructure (railways, highways to manage production growth)
- ✓ Uncertainty about the size of annual budget destined by the Congress to biofuels projects
- ✓ No major challenges related natural resources (land, water)
- ✓ Trade distortions in the international market

CHALLENGES FACED BY THE SECTOR: Brazil

- ✓ Lack local studies showing positive impact of ethanol on environment
- ✓ Lack of adequate infrastructure (railways, highways) to manage production growth of oilseeds and cereals
- ✓ Lack of adequate infrastructure (pipelines) to manage fuel transportation for exports
- ✓ No major challenges related to natural resources, both for sugar and for oilseeds (available land, no need of irrigation)
- ✓ Impact of manual harvesting on labor demand vis a vis air pollution associated with burning the leaves
- ✓ Competitiveness of biodiesel small scale producers
- ✓ Lack of a global ethanol market

CHALLENGES FACED BY THE SECTOR: Chile

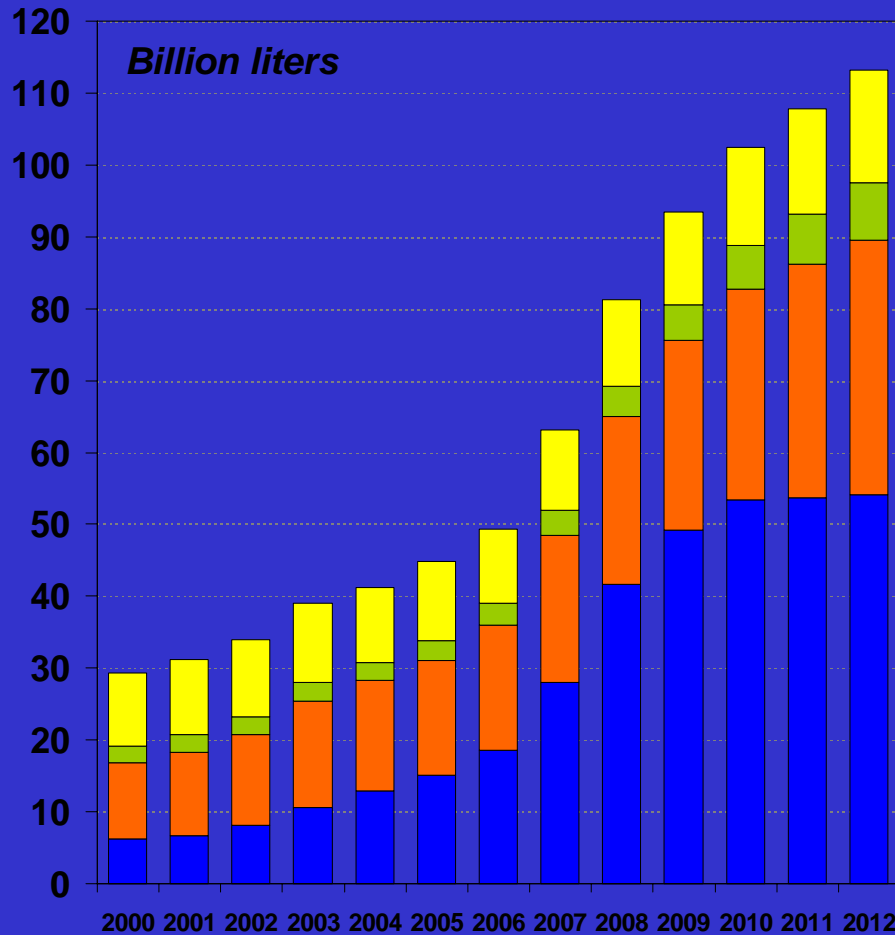
- ✓ Limitations on the availability of land and water
- ✓ Competition from other crops (higher opportunity costs than in Brazil and other neighbors)
- ✓ Non mandated blends
- ✓ Lack of local information on the impact of biofuels on the carbon balance (more doubts in ethanol using grains as feedstocks)
- ✓ Little reasons to move forward in the tax exemption initiative
- ✓ Institutional limitations for protection through border measures (FTAs)
- ✓ Lack of competitiveness of small scale biofuel producers

FINAL COMENTS

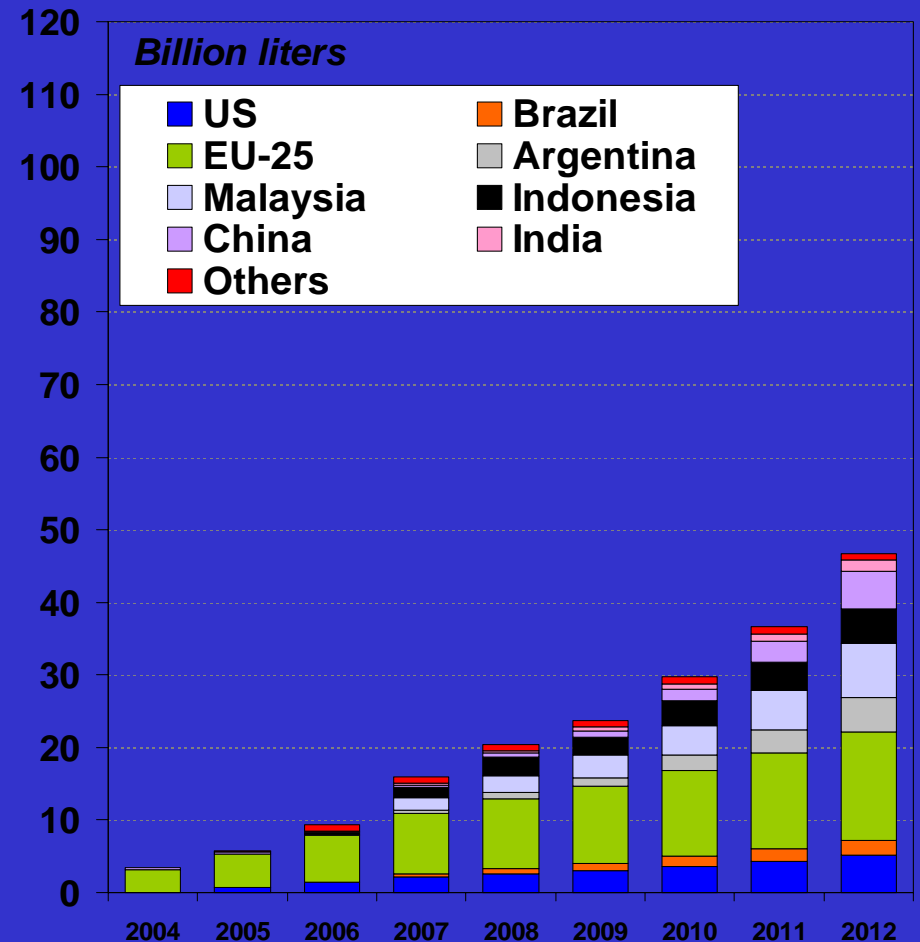
- ✓ South America has high potential for biofuel production and exports, based on:
 - ✓ Current availability and surpluses of main feedstocks: sugar and oilseeds
 - ✓ Large availability of land and potential productivity growth. No irrigation needs
 - ✓ Economies of scale of main biofuel producers in Brazil and Argentina. International competitiveness
- ✓ Brazil is very competitive in sugar ethanol and Argentina in biodiesel
- ✓ Biofuels provide to South American countries opportunities to improve prices, diversify income, add local value and assure additional demand to its increasing crop production

BIOFUELS WORLD PROJECTIONS

Ethanol Production



Biodiesel Consumption



Note: Projections based on the announced targets and capacities of each country.

Source: CARD – Iowa State (Prof. Bruce Babcock for US), FAPRI, ACTI, FO Licht, UNICA, ABIOVE, TOEPFER International and ICONE.