



**THE AGROVISION BUSINESS CONSULTING** - Government, Diplomatic, Companies, Environmental Advising and Audits; Laws; Taxation; Finance; Establishment and Implementation of Holding; Due Dilligences; Business Plan; F&AS; Competitive Intelligence Plans, Selection, Implemen tation and Monitoring of Direct Investments, external or internal, in Partnership in Agribusiness, Mining, Forestry, Energy, Biofuels, Construction and Infrastructure; RSDP/CIDP.  
(Brasilia-BRAZIL)

# **“The Agrovision New Brazil 2020 Project”**

**“COMPLETE DIAGNOSTIC, TENDRES AND BETTER OPPORTUNITIES FOR INVESTMENTS DIRECT OR PARTNERSHIPS IN GOOD BUSINESS PRODUCTION AND/OR PROCESSING OF MINERALS, FOODS, BIOFUELS, TIMBER, CRAFTS, ESSENCES, MEDICINAL PLANTS.. CONSTRUCTIONS ETC.. IN NORTH CENTRAL AND NORTHEAST REGIONS FOR FAST EXPORTS AND / OR CONSUMPTION IN LATIN AMERICA (after the full access to the Pacific, via Peru or Bolivia / Chile, or much more deep, efficient, cheap and quick Ports in the Atlantic; more sufficient and cheap energy and self-sufficiency in cheap fertilizers/fuels and mainly fast conclusions of new Railways, Waterways, Ports and other works under fast implementation between 2005 and 2019”)** (Note: This diagnosis is self-explanatory, but it requires reading programmed, time-consuming - minimum 3 hours - and quite analytical. In the beginning, there is a RESUME in the form of presentation and in the end is the descriptive overview and updates until 2012)

**Prof. MB Cezar Clímaco  
AGROVISION – Brasília (DF)  
December 2012**

**Brazilian Grains, Foods, Timbers & Bioenergies Flows 2012 (soy, corn, meats, dairy, ethanol, timbers, sugar etc..) are STILL VERY EXPENSIVE AND DIFFICULT, VERY REDUCING OUR INTERNATIONAL COMPETITIVENESS AND INCREASING VERY MUCH OUR PRODUCTIONS & PROCESSINGS COSTS**

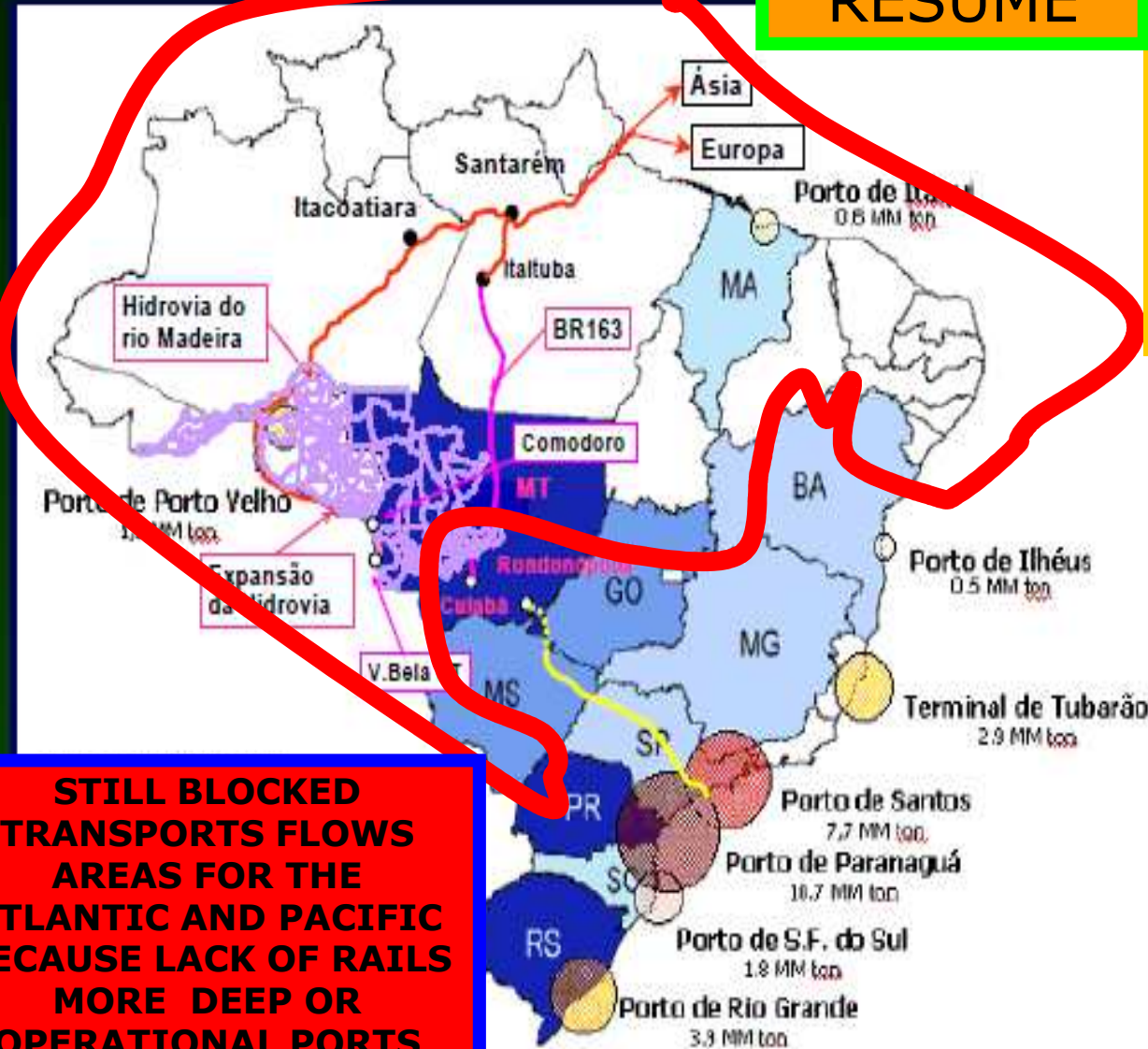
**“RESUME”**

**Our area STILL with logistics locks represents about two thirds of the country and needs serious investors in transport, energy, mines, and especially in processing agroindustries which want to earn much money and to ensure their provisions (on DIRECT Investments or on PARTNERSHIPS WITH FARMERS)**

**Due to logistical STILL lock, the cost of HIGHWAY transporting soybeans from Sorriso (MT) to the Port of Santos in 2011 stood at \$ 120 / t, compared with U.S. \$ 20 / t cost of the field to the port in Argentina.**

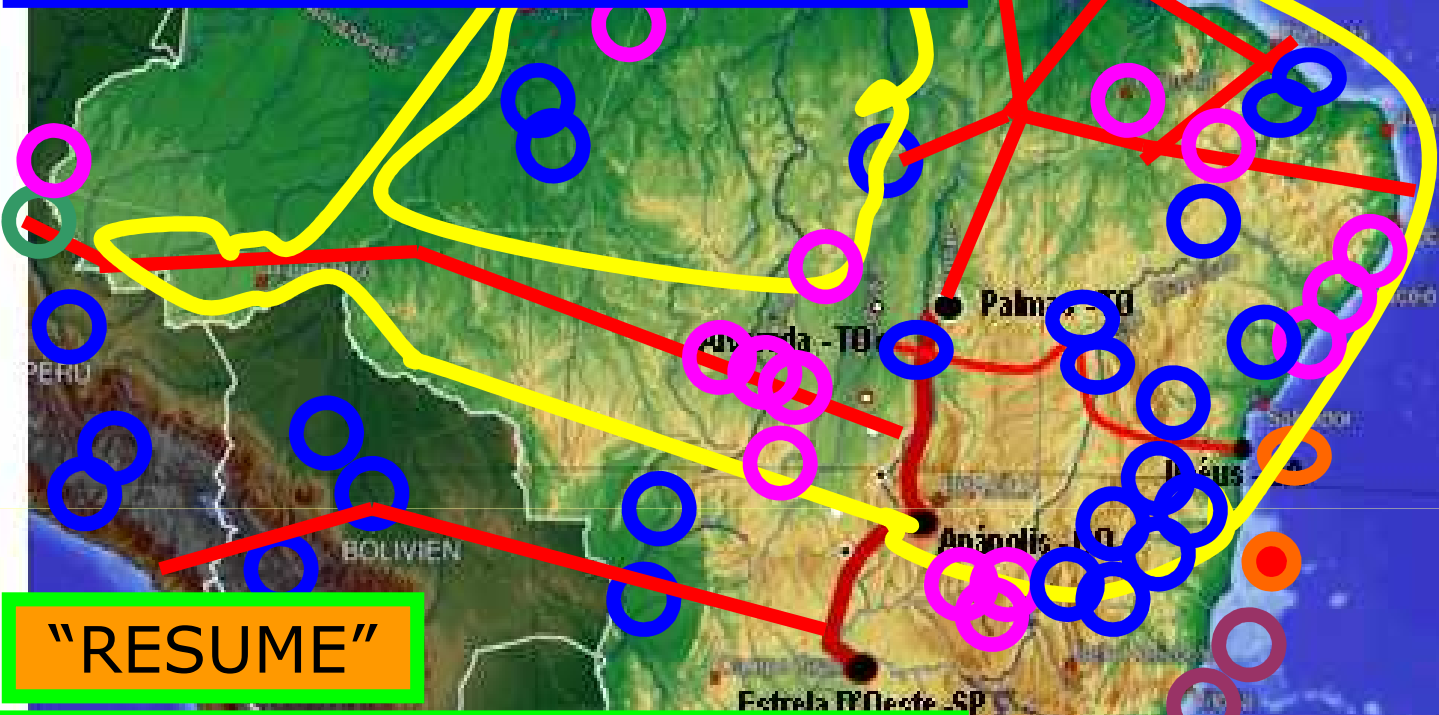
**In late 2012, the cost of road freight inside the MT to the Port of Santos was so high that represented 40% of the sale value of the standard load with 37 tons of corn. The trucks were charging \$ 3,800 for shipping, before \$ 10,200 of the value of the cargo.**

**STILL BLOCKED TRANSPORTS FLOWS AREAS FOR THE ATLANTIC AND PACIFIC BECAUSE LACK OF RAILS MORE DEEP OR OPERATIONAL PORTS**



**"INFLUENCE AREA of the AMAZON FOREST in 2020 with more minerals, wood production on sustainable & Legal management forests Opportunitites and legal Projects for biodiesel of palm tree and others palm oil plants; rubber; medicinal plants and herbs extraction and exotic fruits pulp & juices, handicraft etc.."**

**Future rails under construction or under licenses releases**



Acess to fertilizer more several ores of Peru + to Pacific Sea by Peru Ports closer 3,000 km from Asean ports Than our current Tubarão Port

Current and future Fertilizer giant mines (self-sufficiency in more 9 year even for exports)

Giant mines of FE, MN, AL, AU, NI, ZN, TA, U e graphite + oil more gas in Brazil, Peru and Bolívia

The Future offshore Port Ilhéus/Aritaguá + steels (starting)

The future Pres. Kennedy offshore private Port (oper. by the Rotterdam Port) + oreduct from the MG State

The Açú offshore private port (start in 2013)+ future Southwest Port, more steels (all of the EBX Group

**THE NEW BRAZIL 2020 AREA:** for sustainable and high profitable agribusiness Projects + ores + future great all consumption //obs: excluding Amazon Forest

**"RESUME"**

**"THE MANY AND NEW OPPORTUNITIES FOR PROGRESSIVE MUCH MORE HIGH PROFITS IN THE CENTRAL NORTH AND THE NORTHEAST REGIONS (higher revenues and very lower costs)"** with the continued increase in local demand - by the progressive migration and development - and much more exports, following the conclusions of the various railroads, offshore ports and hydro, all giants, under construction from 2005 to 2019. From inside the State of MT via Transcontinental Railroad more ports of Peru (some deep) we will be about 1.859 kilometers closer to Shanghai Port than port of Tubarão-ES (ores and grains) via South Africa in large ships or 7.249 km closer than via Santos + Valparaiso Ports (Chile).

**"SCOPE AREA of THE AGROVISION NEW BRAZIL 2020 TEORIC PROJECT"** (excluding the Amazon Forest) with very much sustentable productions of foods, meats, grains, bioenergies, minerals, timber products etc. and more consumers, fast and easy access to Latin American & Pacific, cheap fertilizers etc."



# AMERICAS- CURRENT AND FUTURE SHIPPING ROUTES

Brazil, possibly, will have greater competitiveness in the Pacific to Shanghai-China and other Asia than the East Coast of the U.S. (if by the new PANAMA CANAL) with the new Transcontinental Railroad until some deep Ports of Peru and Chile, through Bolivia, and embarking / disembarking giant ships with ore, grain, ethanol, sugar, meat, general cargo and giant containers ships as the giant Emma Maersk

**"RESUME"**

North-Northeast Route: from New Orleans to Rotterdam = 8,874 km; from New Orleans to Hong Kong = 19,780 km (with overflow because only Suezmax vessels with load below 115 thousand tones, pass through the Suez Canal and new post-Panamax just below 75 thousand tons pass through the new Panama Canal - after 2014. Smaller ships are more expensive and slower. Also the trip is less reliable and may be delayed delivery of cargo under the terms and conditions combined)

North-Northwest Route: from San Francisco to Shanghai = 9.418 km

Center North-Northwest Route: from New Orleans-New Panama Canal to Shanghai = 19.294 km (very expensive toll and only for 75 thousand tonnes ships)

New South-Northwest Route: From inside State of MT (largest current grain producer and future larger meat processors) to Shanghai-China = 20.748 km (16.545 km by sea + 4.203 km by future Transcontinental Railroad, being 1.500 km in Peru), via Ports of Bayovar, Paita and others/Peru

New brazilian rails (green) and waterways (blue)

Route South-East: From inside State of MT to Rotterdam = 12.126 km (10.026 km by sea + 1.250 by current rail + 850 by current highway)

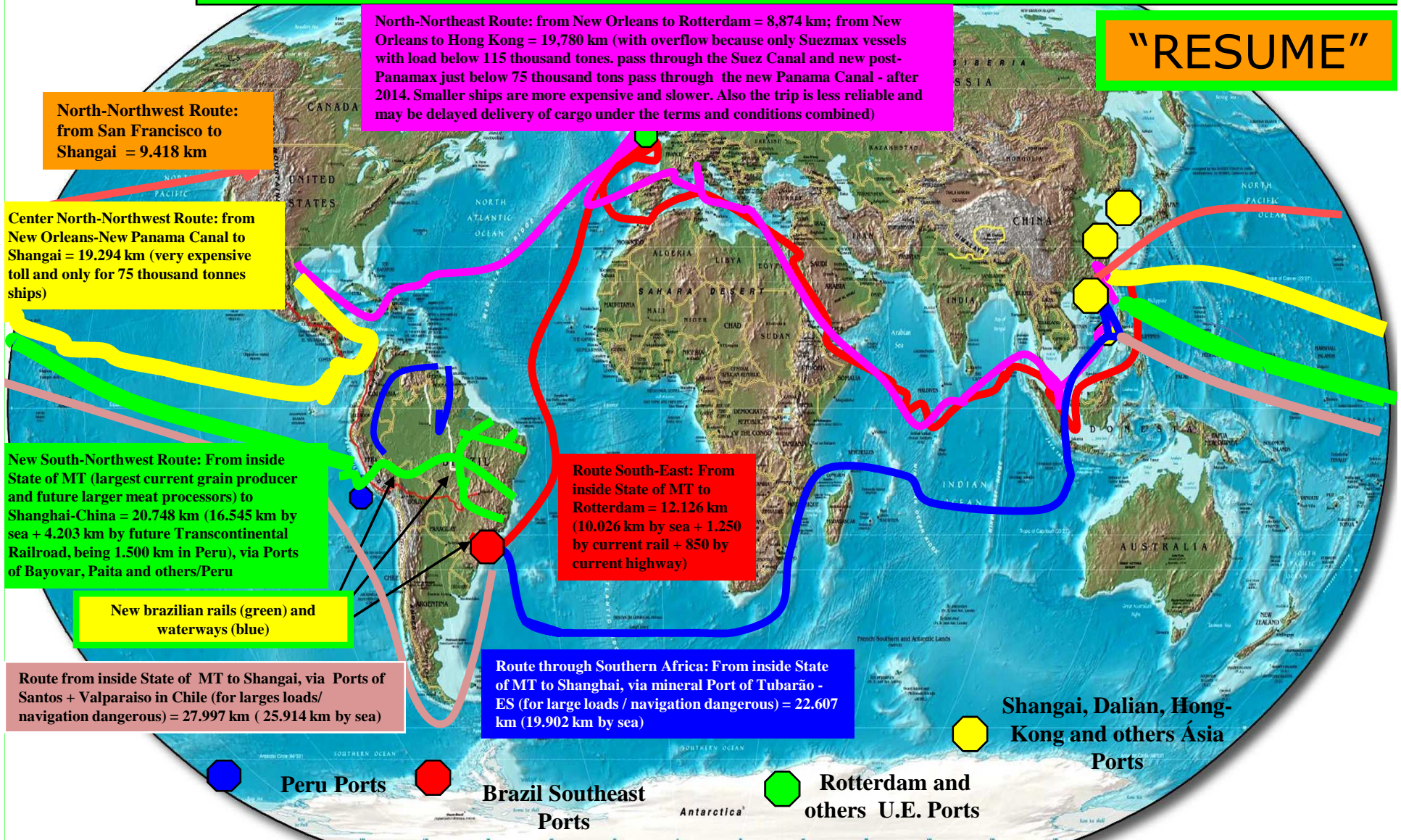
Route from inside State of MT to Shanghai, via Ports of Santos + Valparaiso in Chile (for larges loads/ navigation dangerous) = 27.997 km ( 25.914 km by sea)

Route through Southern Africa: From inside State of MT to Shanghai, via mineral Port of Tubarão - ES (for large loads / navigation dangerous) = 22.607 km (19.902 km by sea)

Shanghai, Dalian, Hong-Kong and others Asia Ports

Peru Ports  
Brazil Southeast Ports

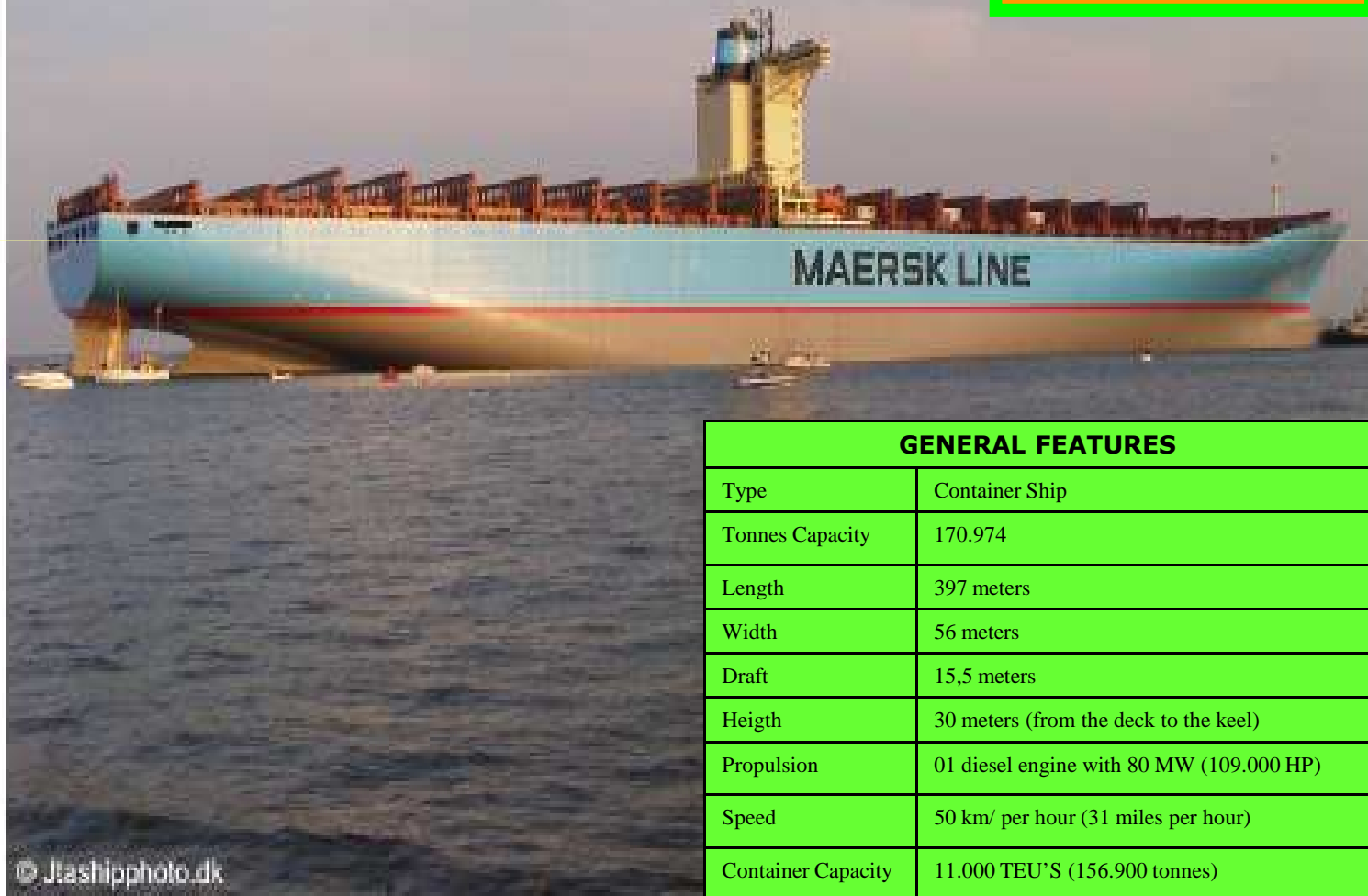
Rotterdam and others U.E. Ports



**The Emma Features: Currently, is the largest container ship operating in the world; Operates on the route between Rotterdam (Netherlands) and ports of Asia, taking 63 days (round trip); Make calls at ports in China, Japan, England, Sweden and Netherlands; The silicone paint and the hull below the waterline reduces the resistance to the advance of the ship and save 1.1 million liters of fuel per year. The paint is environmentally safe.**

**Emma Maersk giant Ship**

**"RESUME"**



**GENERAL FEATURES**

Type	Container Ship
Tonnes Capacity	170.974
Length	397 meters
Width	56 meters
Draft	15,5 meters
Heigth	30 meters (from the deck to the keel)
Propulsion	01 diesel engine with 80 MW (109.000 HP)
Speed	50 km/ per hour (31 miles per hour)
Container Capacity	11.000 TEU'S (156.900 tonnes)



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# **“The Agrovision New Brazil 2020 Promotion Project”**

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**DETAILED PROJECT MORE SOME INITIAL BUSINESS RECOMMENDATIONS**

(Note: This diagnosis is self-explanatory, but it requires reading programmed, time-consuming - minimum 3 hours - and quite analytical)

**Prof. MBA César Clímaco  
AGROVISION – Brasília (DF)  
December 2012**



**"PROJECT"**

## HUMANITY - 10 MAJOR PROBLEMS IN 2050:

- 1) **ENERGY** (Brazil solution);
- 2) **WATER** (Brazil solution);
- 3) **FOOD** (Brazil solution);
- 4) **Urban vehicles, garbage, litter and the environment** (Brazil solution);
- 5) **Poverty**;
- 6) **Education**;
- 7) **Democracy**;
- 8) **Population**;
- 9) **Diseases** (Foods Brazil solution);
- 10) **Terrorism and wars, including for energy, water and food** (Brazil solution).

**In October/2011, the world reached 7.0 billion people**

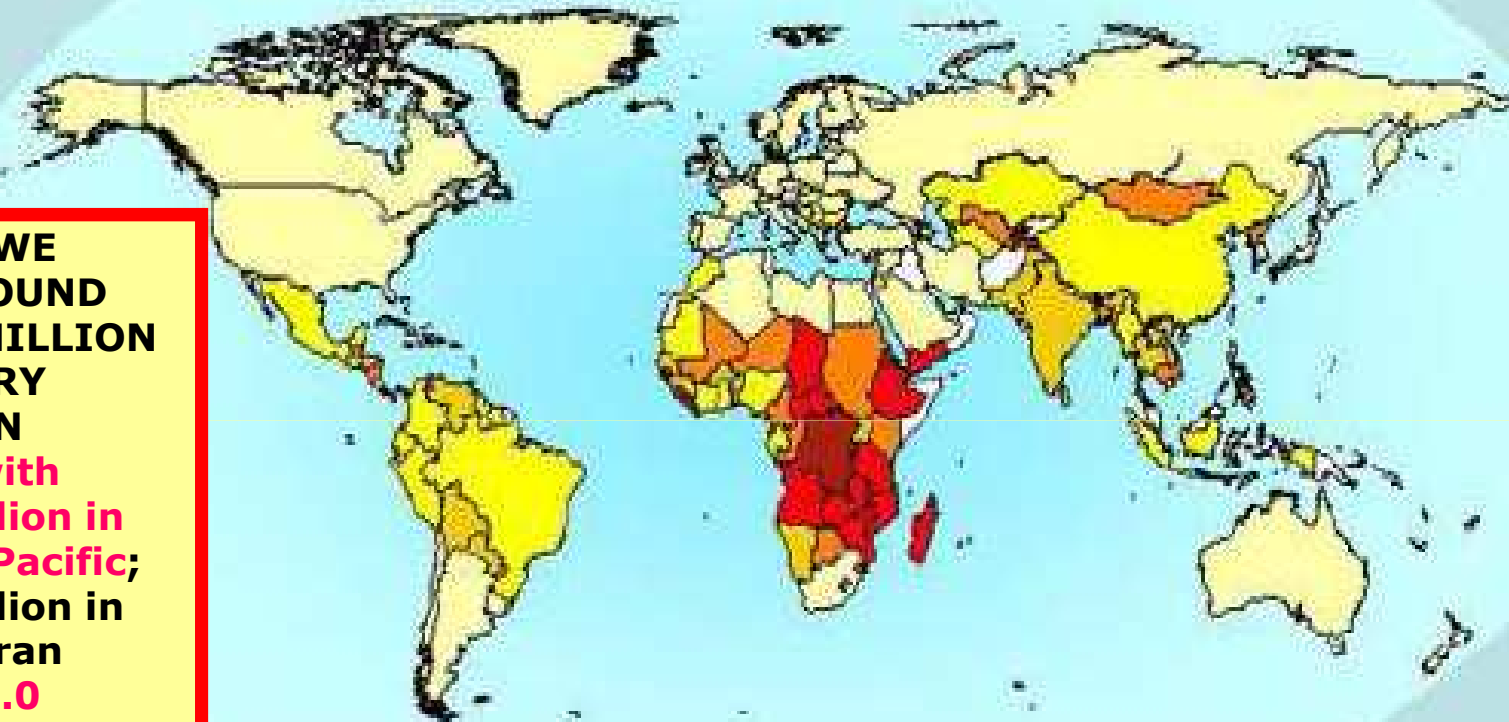
**WORLD - POPULATION x HUNGRY – Trends Forecasts. (millions of people)**

ITEMS / YEARS	1997	2006	2009	2050	Var. %	Var. numerical
Population	5.400,0	6.300,0	6.700,0	9.020,0	<b>67,0</b>	<b>3.620,0</b>
Hungry + poor nourished	825,0	873,0	1.020,0	1.262,8	<b>53,1</b>	<b>437,8</b>
Part. %	<b>15,3</b>	<b>13,9</b>	<b>15,2</b>	<b>14,0</b>	<b>-8,4</b>	<b>--</b>

Fonte: Prof. Climaco Cezar com dados da ONU e FAO 2009

# World – The FAO Map of hunger

In 2009, WE HAVE AROUND 1,020.0 MILLION OF HUNGRY PEOPLE IN WORLD with 642.0 million in Asia and Pacific; 265.0 million in sub-Saharan Africa; 53.0 million in Latin America Caribbean; 42.0 million in Middle East + North Africa and 15.0 million in developed countries

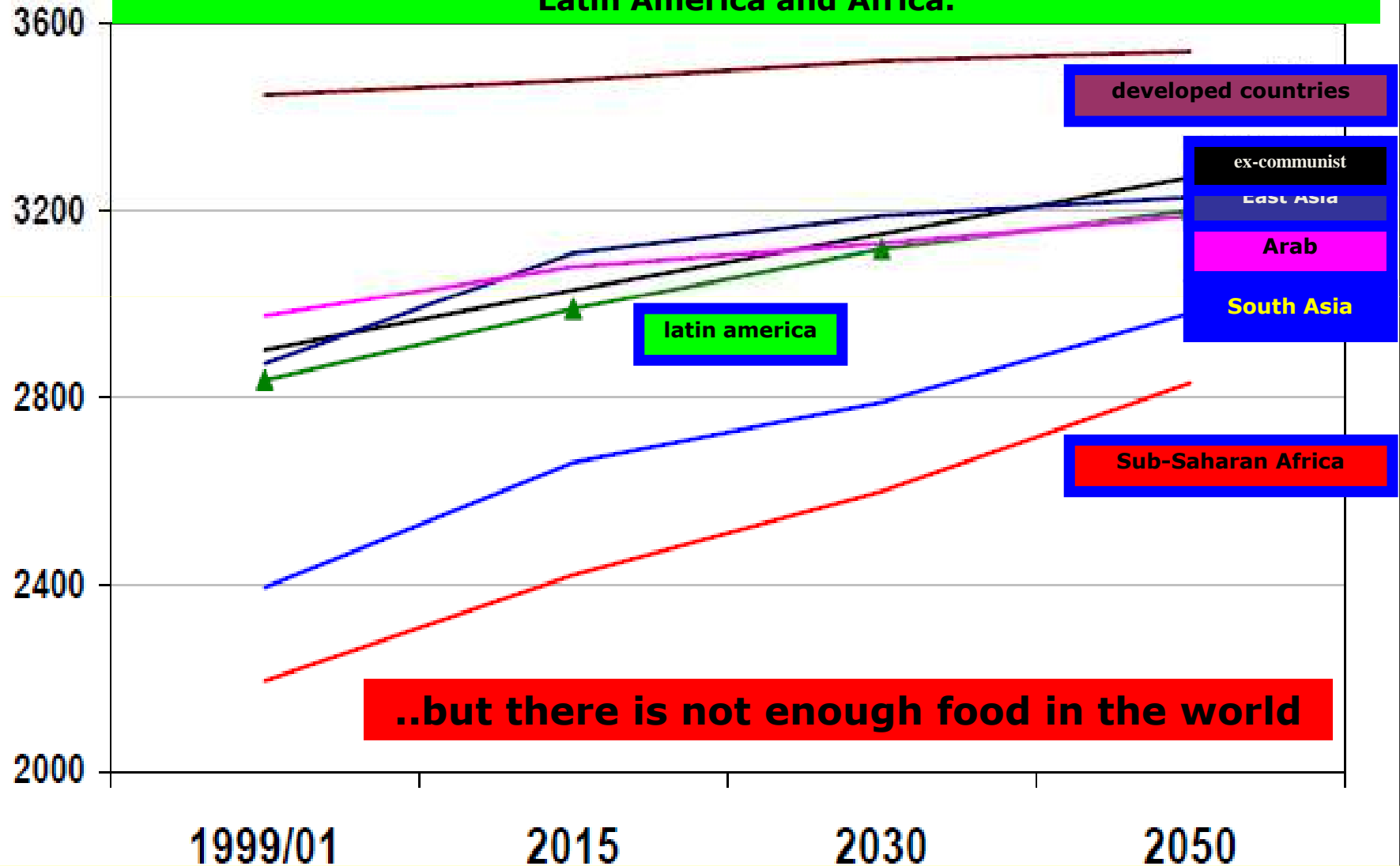


% - population poor nourished 2002-2004



# World – Estimates of changes in per capita consumption of food (kcal/person/day)

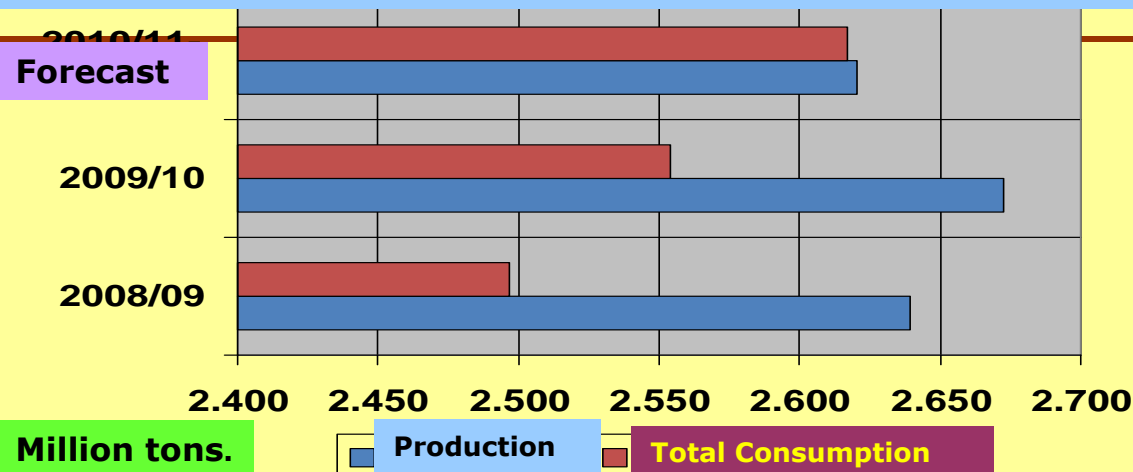
Besides the expected increase of population, the quantity and quality of consumption "per capita" tends to increase greatly, especially in Asia, Latin America and Africa.



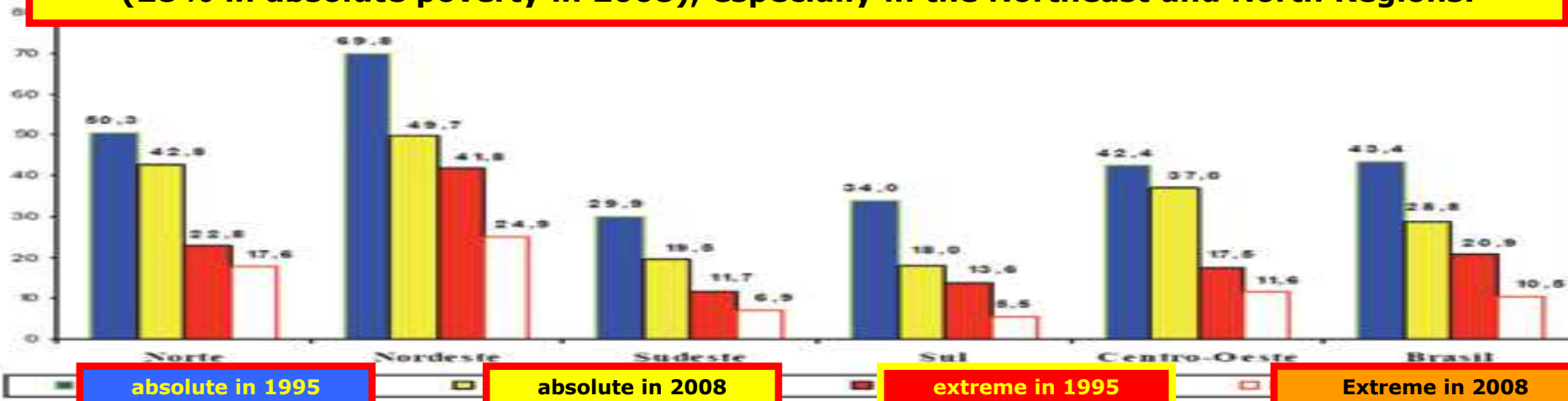
..but there is not enough food in the world

**The World is still hungry and this situation may worsen with production falls due to climate change, due to land abandonment or its desertification more due the continuing migration to the cities. FAO CALLS FOR URGENT INCREASED PRODUCTION AND SUPPORTS IN BRAZIL**

**Recent, world consumption of grains again increase more than supply, reducing the stockpiles dangerously. FAO calls for producing countries to expand production by 70% by 2050.**



**In Brazil, incredibly, there are still hungry, because the poverty rate is still high (28% in absolute poverty in 2008), especially in the Northeast and North Regions.**

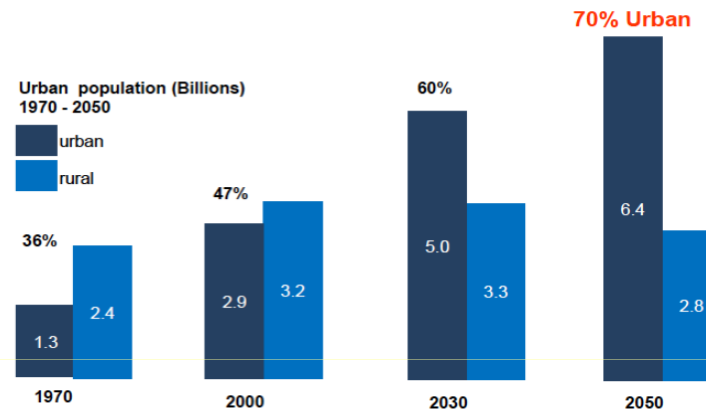


**In 2011, according to IBGE, Brazil still had 16.3 million people in poverty (extreme poverty) - equal to 8.5% of the country people - particularly in rural areas, where 25.0% of people still living in poverty mainly in the North and Northeast Regions ("focus regions of this work")**

**The further development and the income "per capita" growth in some countries still very increase the urbanization and population in many countries expanding enough demands for food & biofuels and reduce the workers and families in rural areas, including in Brazil.**

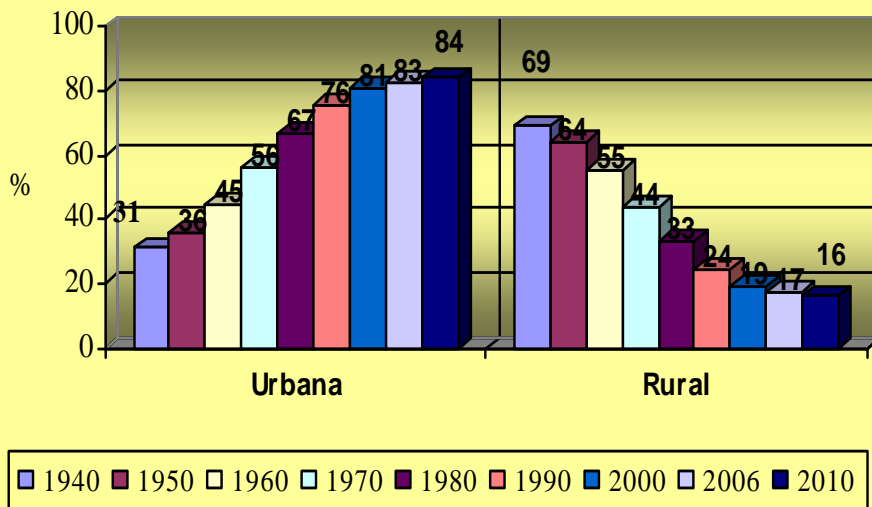
**Worldwide more than 50% of the population already lives in cities and in 2050 may reach 70%. In Brazil, urbanization is much larger than the world average. Between 1960 and 2010 (50 years), our urban population increased five times with all socioeconomic and environmental consequences of this. The interior needs to develop and quickly.**

**Forecast: 3 billion additional people living in cities**



Source: United Nations, World Urbanization Prospects: The 2006 & 2007 Revisions

**Brasil Urban x Brasil Rural (population)**



**In Brazil, only 20% of people still live in the rural area (80% live within 200 km from the sea). In India 70% live in the country, China, 50% and 26% in the U.S.**

**Without adequate and appropriate incentives and no guaranteed net income, who will be in Brazilian rural area to produce food, water, biofuels, wood etc.?**

**Only after the future railways, ports, power plants and more investments in inner cities more rural areas, the socio-economic conditions of Brazil should improve greatly, reversing the migration and increasing the educational level. So, there are also many opportunities to invest in the education sector and in the social welfare too**



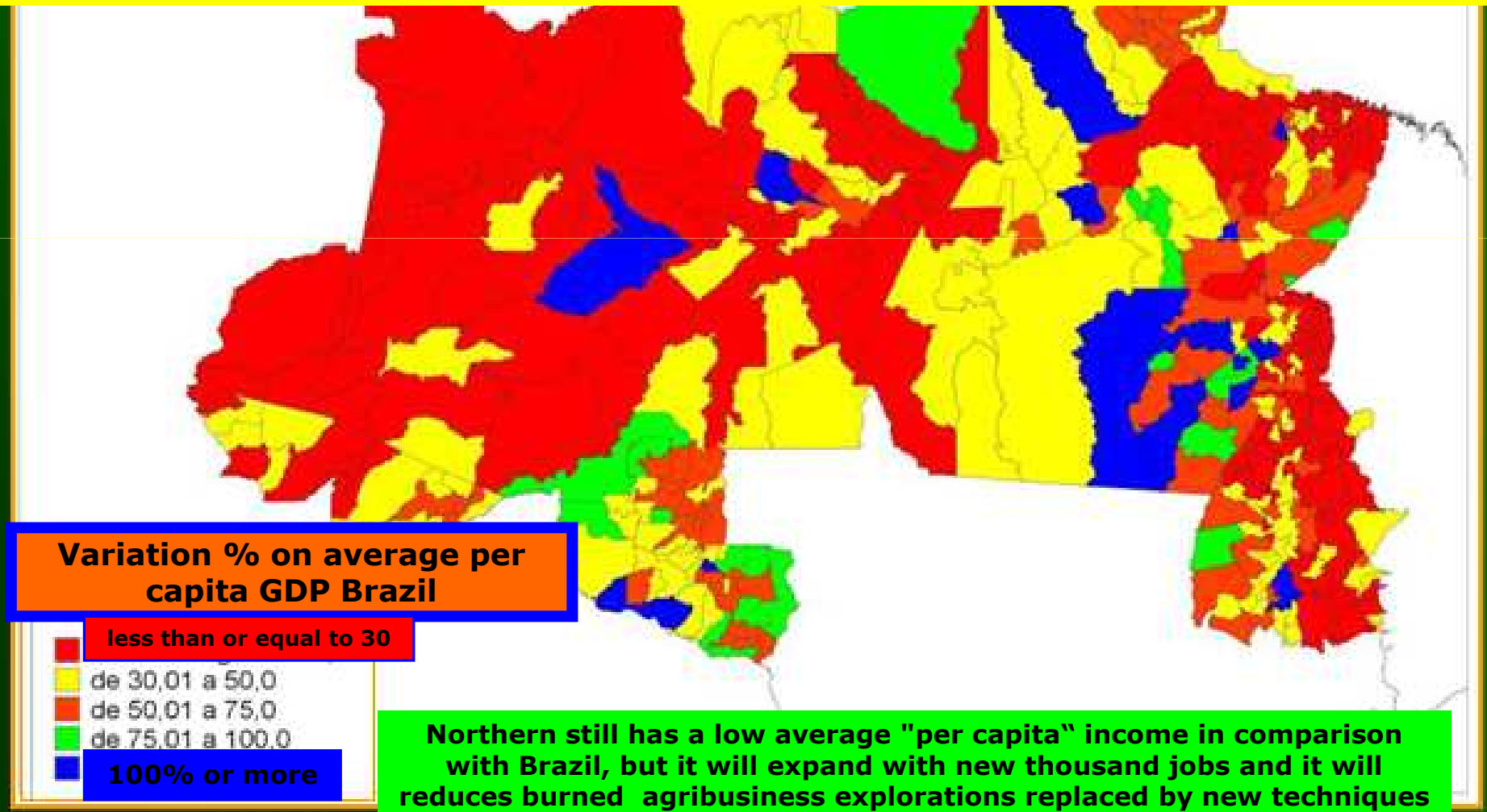
Sectors	Population - %	Average income -R\$	Median income -R\$	GINI INDEX	Average schooling years	Average age years
Agricultural	11,0	637,4	450	0,529	4,0	41,7
Industry	23,9	1.041,1	700	0,454	8,0	36,8
Services	64,9	1.211,6	690	0,526	9,7	36,8
<b>TOTAL</b>	<b>100,0</b>	<b>1.105,7</b>	<b>630</b>	<b>0,518</b>	<b>8,6</b>	<b>37,3</b>

**Details of the agricultural population above**

Regions /States	Population - %	Average income -R\$	Median income -R\$	GINI INDEX	Average schooling years	Average age years
North	8,7	636,5	450	0,479	3,5	40,6
Northeast	43,2	344,1	248	0,470	3,0	41,0
MG+ES+RJ states	16,5	664,1	465	0,444	4,4	42,3
State of São Paulo	8,8	886,5	600	0,423	5,9	40,8
South	14,9	1.048,4	600	0,515	5,2	43,9
Center-west	7,9	1.137,5	635	0,537	5,1	42,2
<b>BRAZIL</b>	<b>100,0</b>	<b>637,4</b>	<b>450</b>	<b>0,529</b>	<b>4,0</b>	<b>41,7</b>

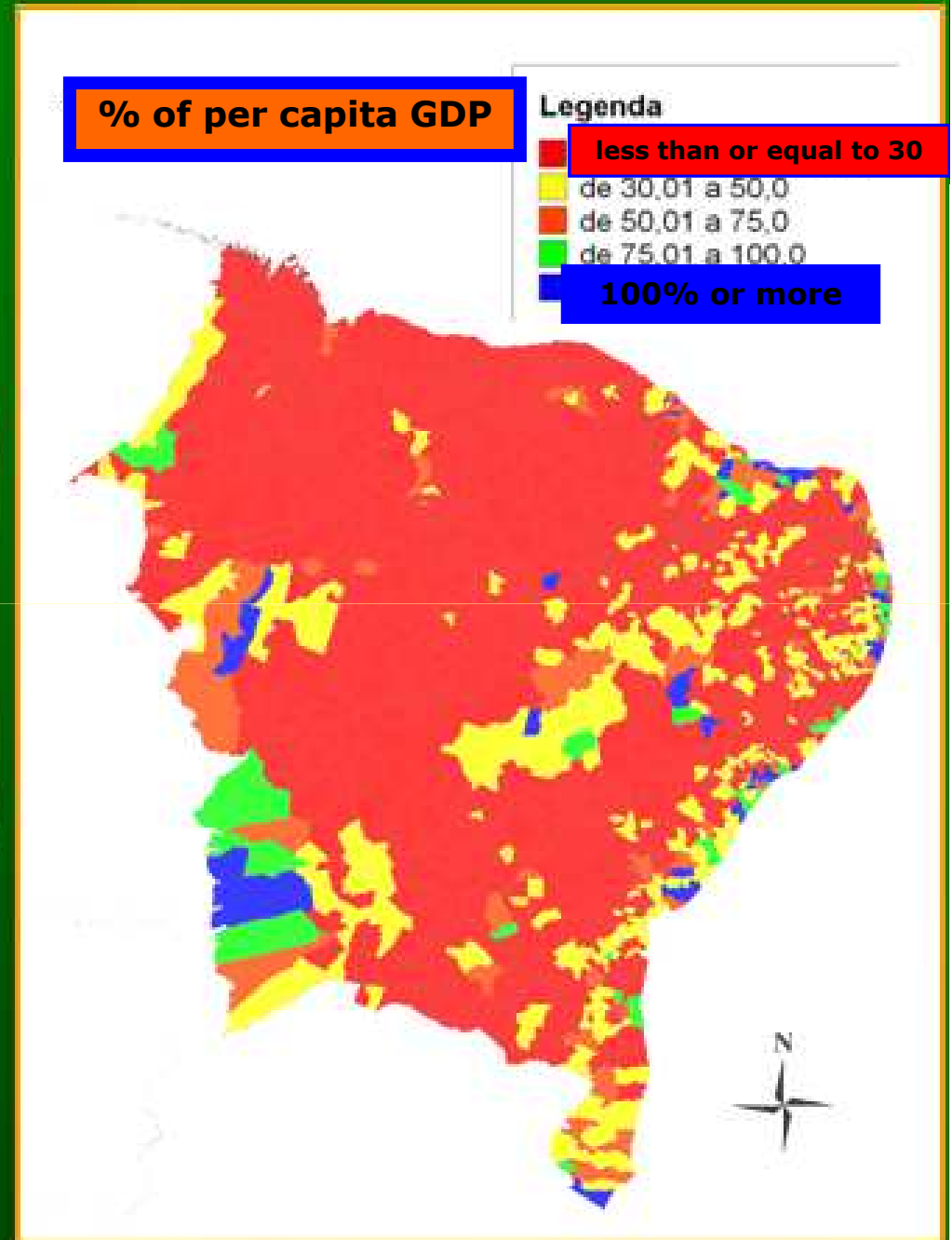
# Brazil – Northern Region – “Level of Poverty” - **Area for minerals, biodiesel and forest products - Responsible & Sustainable Expansions**

In Brazil, there are still places with low consumption due to low income, that **TENDS TO INCREASE WITH THE THOUSANDS OF NEW JOBS, MORE AGRO-MINERAL AND PROCESSED FOODS NEW INVESTMENTS EXPECTED FOR THE PROJECT "NEW BRAZIL 2020"**. The potential for expansion of the Brazilian domestic market and the Latin America market - **MORE SAFE AND PROFITABLE - IS STILL LITTLE EXPLORED BY MOST AGRIBUSINESS, FOOD PLANTS OF BRAZIL.**



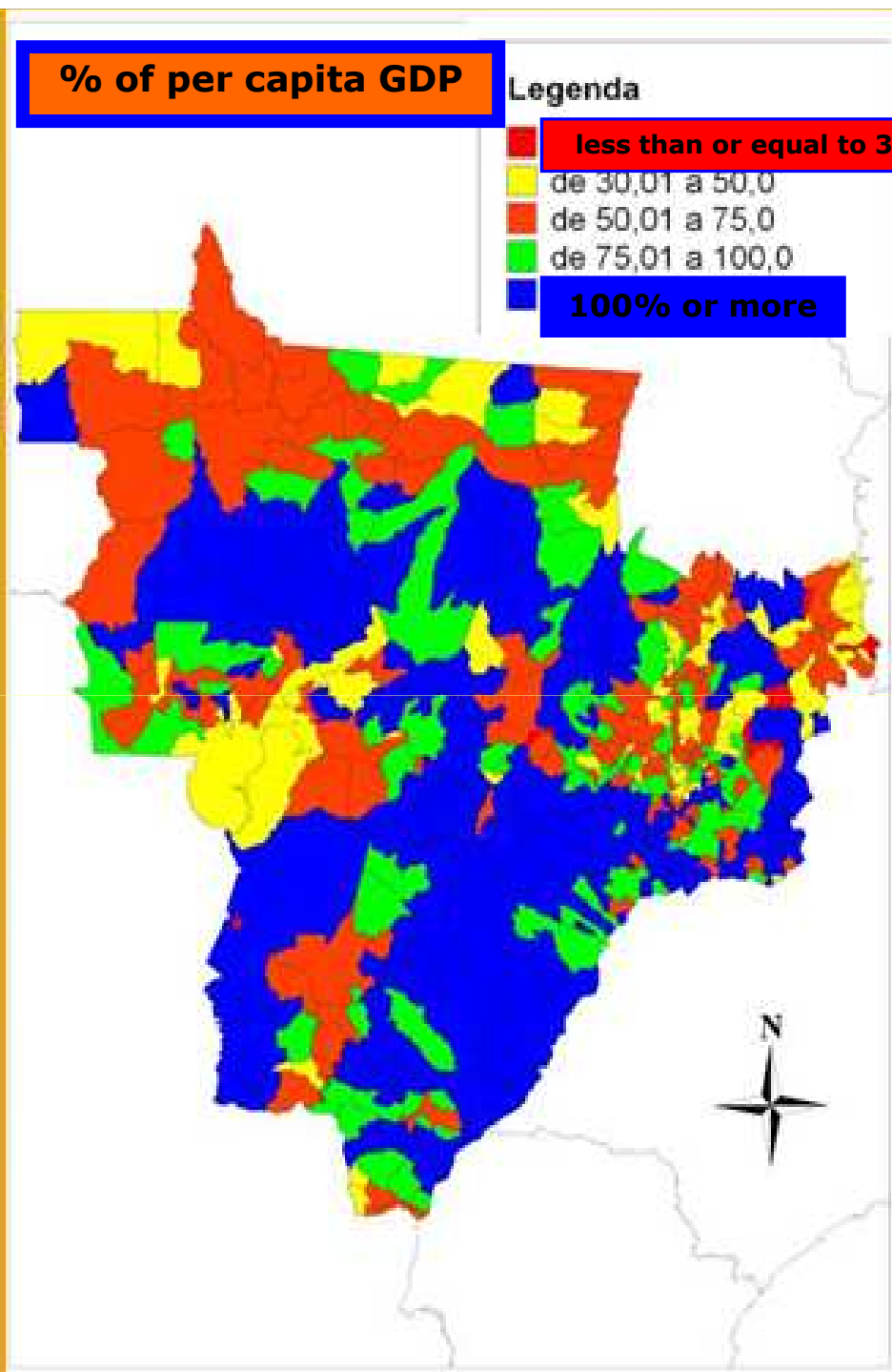
Area of very low "per capita" income but with perspectives to reverse quickly, raising the consumption and social welfare & nutritional inclusions

Brazil – NorthEast Region - "Level of Poverty"- Less developed area, economically depressed and with little rain, but great potential for irrigated crops & biofuels. **As receive many tourists is the best exposure of high qualities foods and fruits of Brazil**



Current is the third developed area of the country but with low "per capita" income in some places. It will expand exportations & consumption due much more investments expected and large receive of migration of specializing workers

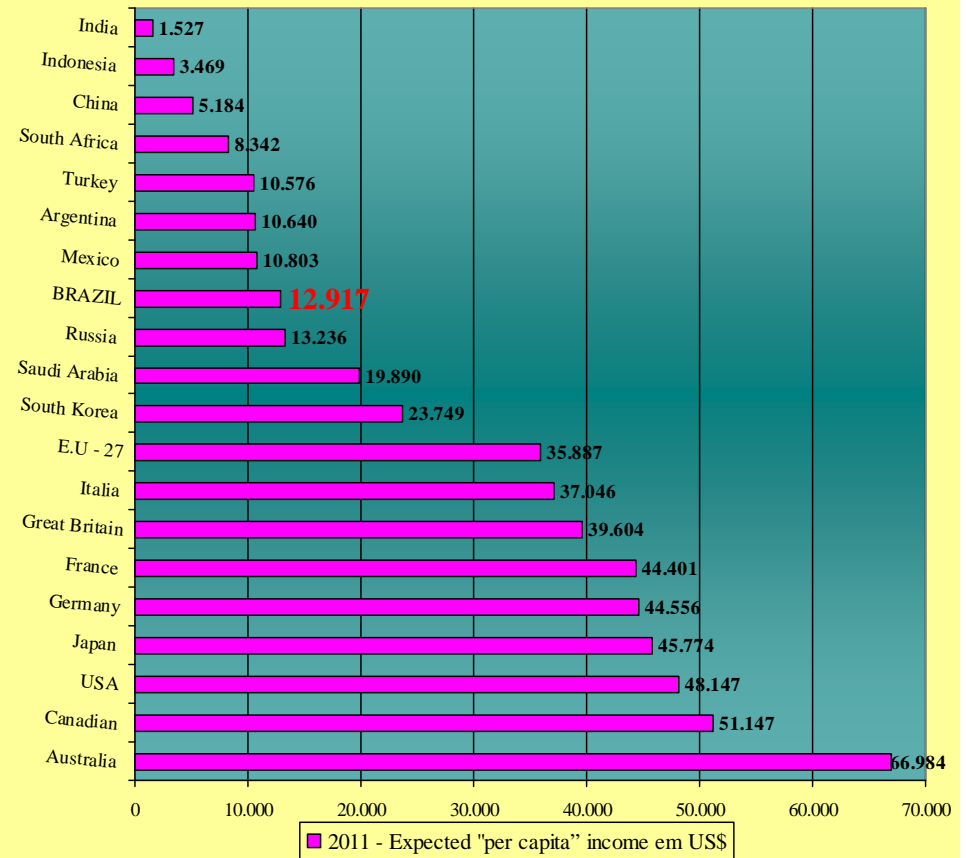
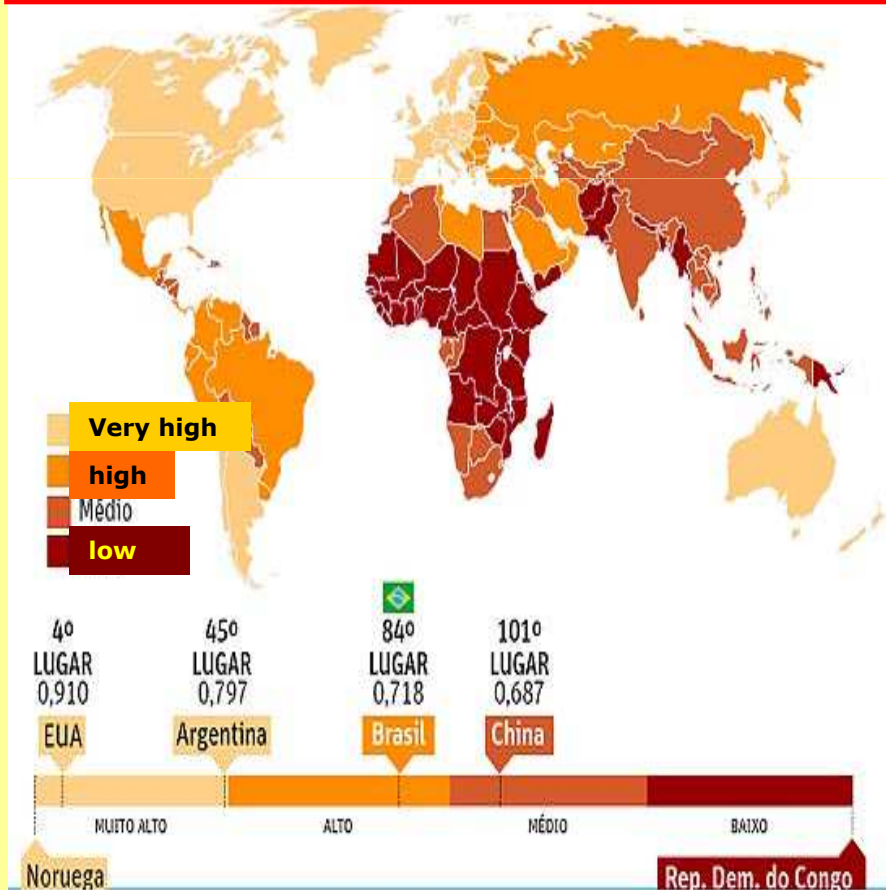
Brazil – Center West Region – "Level of Poverty"- Big areas for minerals, grains, meats, biofuels and foods sustainables expansions Plants, including the ports of Peru & Amazon state (much closer to Asia, USA and Europe) and more new waterways, rail & giants hydroelectric and natural gas plants



**“In recent years, the Brazil rapid enriched, but such this wealth unfortunately is still for a few people on big cities and the poor get almost anything. For this, we need much more direct investments or in partnerships in the inner cities and rural areas for a real income generating and employment, education, knowledge, more consumptions, developments joint and opportunities for all citizenship”**

**Although already the 6th largest economy World (since going to England, 2016 the France and should be the 4th after 2020 when overtaking Germany), Brazil URGENT needs to share better the national “per capita” income and improve its social indicators (HDI), which will greatly expand the domestic demand for food, housing, transport, schools etc.**

**HDI Human Development Index - 2011**



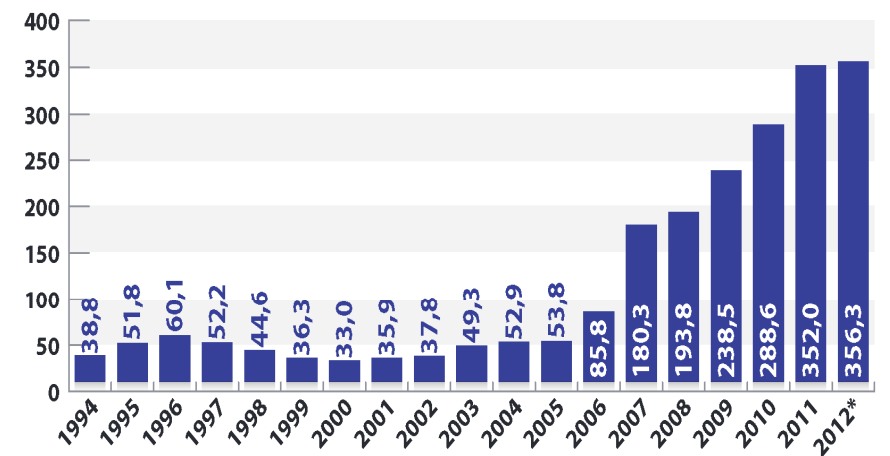
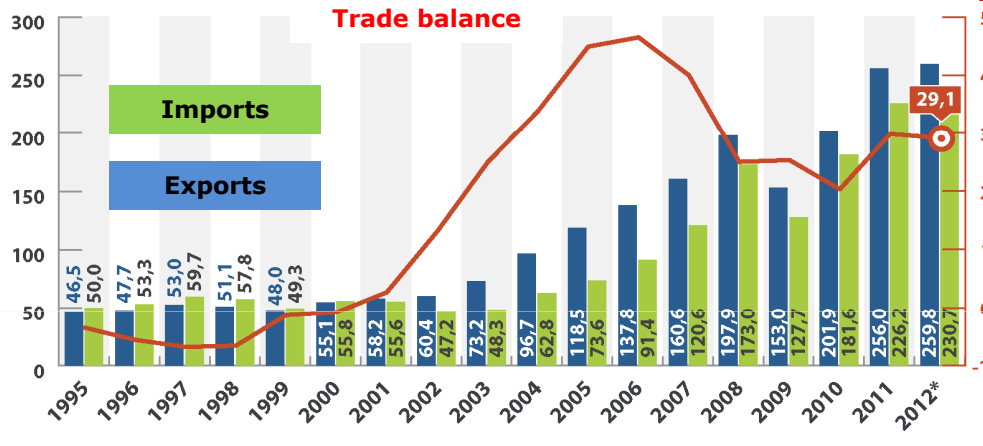




# THE SOCIO-ECONOMICS AND THE DEVELOPMENTAL RESULTS OF THE LAST GOVERNMENTS ALREADY ARE VERY POSITIVE AND UNTIL AMAZING BUT STILL THERE IS MUCH THAT DEVELOP

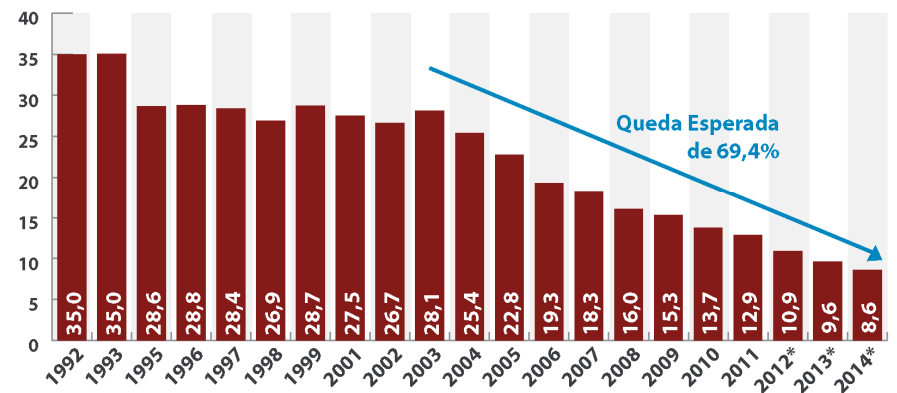
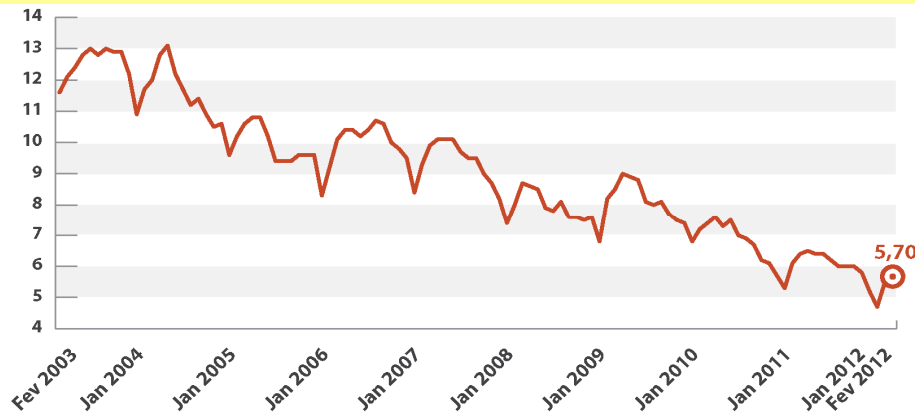
**Our growing exports (already most of Agribusiness items) allow increasing TRADE BALANCES. However, Brazil still only export 1,5% of the total world in 2011.**  
(in U.S. \$ billion)

**With larger trade balances and much more Foreign Investments (trusting in our country), our INTERNATIONAL RESERVES are increasing and they are crucial to finance our better development** (in U.S. \$ billion)

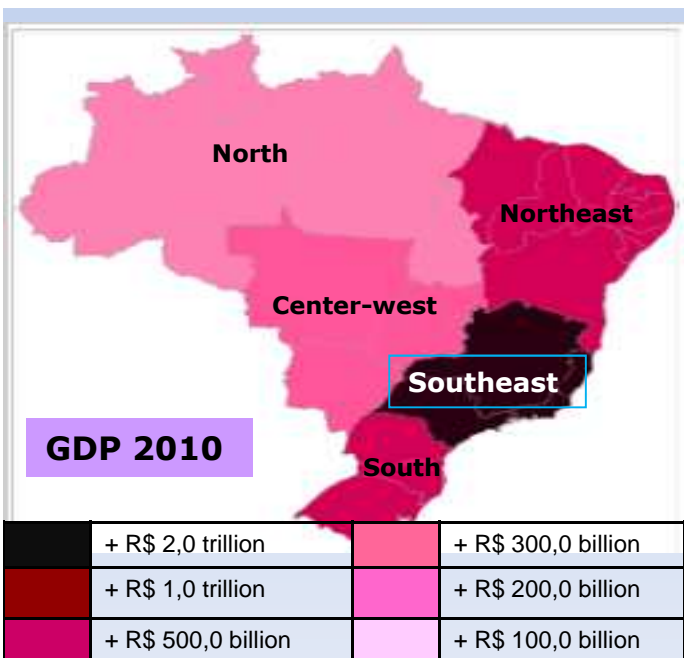
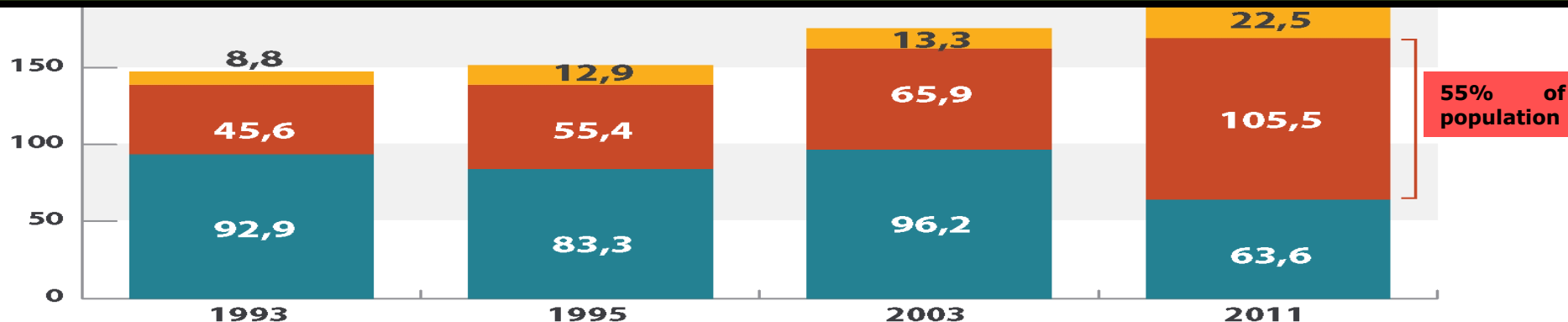


**Our UNEMPLOYMENT RATE is falling steadily and is one of the lowest in the world (% of population)**

**Our POVERTY RATE also reduces each year. (% of population)**



In Brazil, only with the adoption of actions and plans more SOCIAL more large incentives to agribusiness, to total exports and much more developmentalist programs over the past governments, there has been great improvement in the standards of average "per capita" income and of personal consumptions. This is demonstrated by the significant increase of people included in the called "MIDDLE CLASS CONSUMPTION" (Class C = brown box) from 45.6 million in 1993 to 105.5 million in 2011 (equal to 55% of the population), which means a great market and booming. Also in the case of the poorest 10% (classes D and E = blue box), even with the beneficial drop in the number of participants, there was a real increase of 7.2% in average family income.



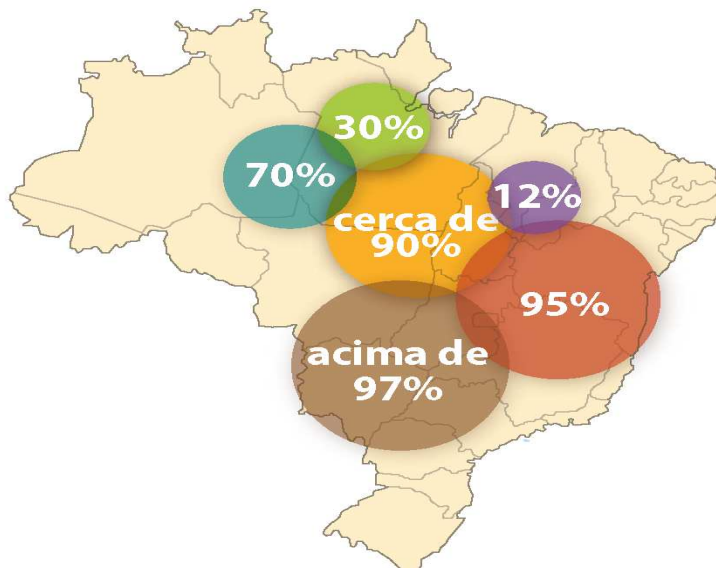
Regions	GDP 2010 – R\$ thousand
Southeast	▲ 2.088.221.000
South	▲ 622.255.000
Northeast	▲ 507.502.000
Center-West	▲ 350.596.000
North	▲ 201.511.000

In Brazil, now our biggest challenge is how to promote our sustainable economic growth quickly, but with proper and fair distribution of family income. As will be seen along and before, our income is still concentrated in the South and Southeast Regions, that means only about one third of our territory and of our capabilities, even remembering that 80% of Brazilians still live as far as 200 km from the sea.

Even using only about 15% of their productive potential of grains, food and renewable biofuels in 2011, Brazil was already featured in world production and exports of grains and food. Furthermore, all productions must meet fully, constantly and advance, to rigorous environmental legislation, health legislation and even sociological (full respect to the Indians, descendants of slaves, archaeological sites etc.), being among the strictest laws in the world.

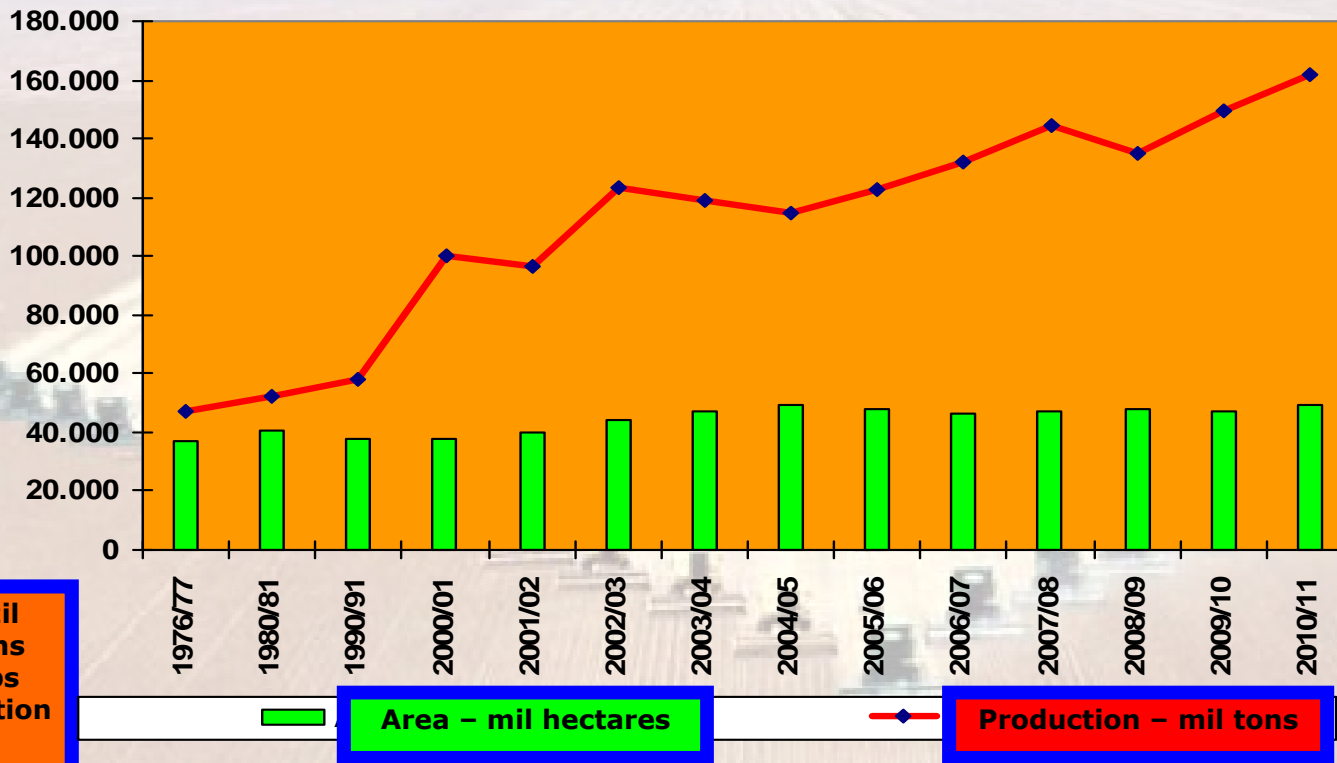
**Participations  
% in World  
productions and  
exports of  
grains and food**

Grains and Food itens	Brazilian Production %	Ranking	Brazilian Exports %	Ranking
Orange Juice	57,21	1°	81,30	1°
Coffee	36,77	1°	27,98	1°
Soybean	28,05	2°	35,61	1°
Bovine meat	15,03	1°	17,25	2°
Broiler meat	15,70	2°	42,24	1°
Porcs meat	3,19	3°	8,34	3°
Corn	7,13	4°	8,56	4°
Sugar	21,25	1°	41,98	1°



- 12% of world surface freshwater
- 70% of Brazil is still covered with the original vegetation
- The Brazil still holds 30% of the forests that are left in the World.
- In Brazil 90% of electricity needs and 45% of the total demand for energy are met by renewable sources.
- 95% of new automobiles manufactured and sold are the type flex, i.e., moved by ethanol or gasoline.
- More than 97% of the cans of aluminum; 55% of PET plastic polymer and 47% of paper already are recycled

**Results of  
called "Green  
Economy" in  
Brazil**



**Brazil  
Grains  
Crops  
Evolu tion**

**Area - mil hectares**

**Production - mil tons**

**Our average yield of some activities increased significantly, but can and need to further very expand at all. At present Crop 2012/13, production may reach 185.0 million tons**

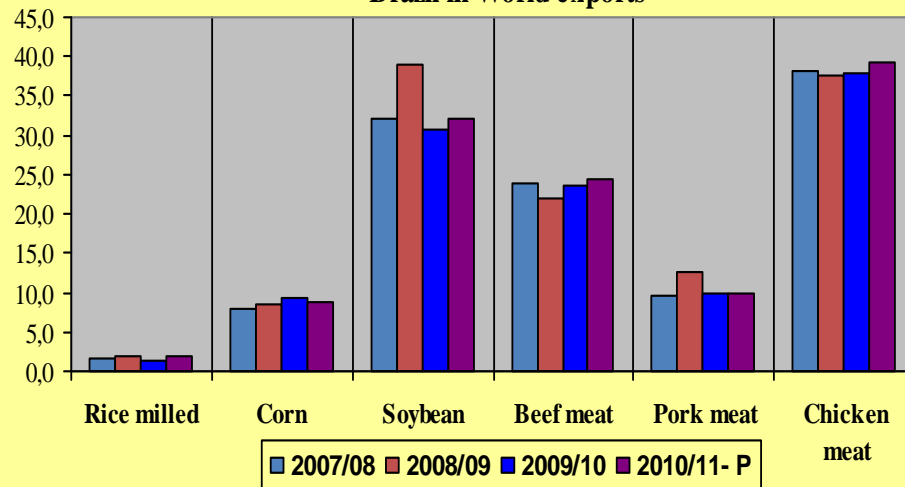
**World x Brazil - Grains, Meat and Milk - Comparative of Average Productivities**

Products	LARGEST World	AVERAGE World *	AVERAGE Brazil	Var.% Brazil / World
Soybeans - t / ha	3.13 (Italy)	2.19	2.64	20,5
Cattle slaughtered Rate - %	45.1 (Russia)	28.6	22.0	-23,1
Rice rough - t / ha	6.53 (Egypt)	4.25	3.03	-28,7
Corn - t / ha	9.66 (USA)	5.03	3.55	-29,4
Pigs-Finished / matrix / year	20.9 (Canada)	14.6	10.1	-30,8
Wheat - t / ha	8.28 ( United Kingdom)	3.03	2.09	-31,0
Fluid Milk - t / cow / year	9.39 (USA)	4.79	1.78	-62,8

Sources: FAO and USDA // \* main countries

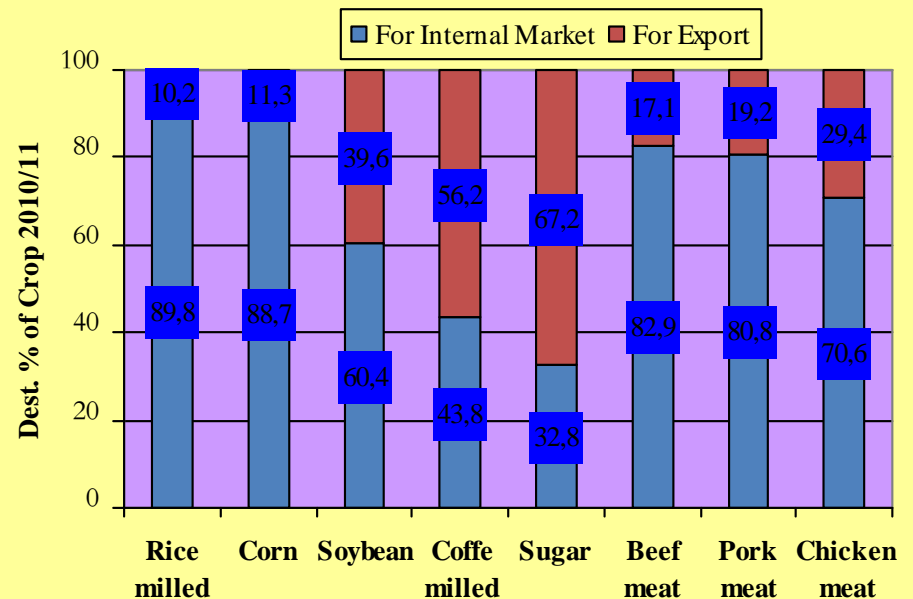
**“Beneficially, most of grain and food is produced for domestic consumption, but Brazil needs to export much more. In 2011, Brazil only sold 1.5% of world total value, worse being 70.0% of commodities (only five of them represent 47% of sales em 2011 and they represented 28% in 2006. Present only iron ore represents 16% of total, being 6% in 2006). With our very high costs of energies + transports (all will very drop soon) and high level of taxes more our exchange difference, our industry can no longer compete externally and are left to produce and sell olny to the domestic market (thankfully large and constantly growing). Many companies also do not want to export because them has much of the internal market to explore”**

**Some Grains and Food - Evolution of Part. % of Brazil in World exports**



**Even exporting more each year, our participation in the global food market is still very low, except for sugar, coffee, soy and chicken meat. RAISING MUCH MORE, WE COULD EXPORT MORE AND DEVELOP MUCH FASTER.**

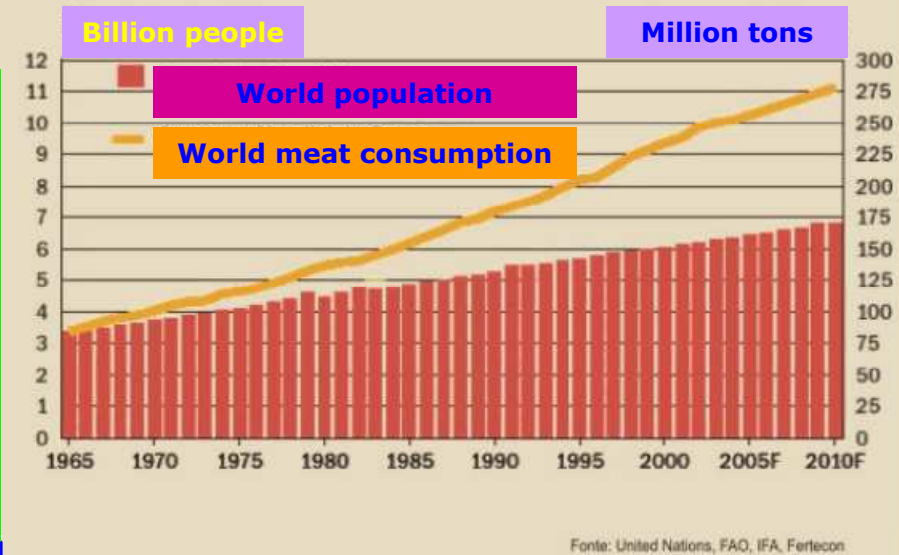
**Beneficially, most of our production goes to the internal market, well feeding many of the poor people, reducing imports and generating millions of jobs and incomes in the processing, transport, distribution, etc.**



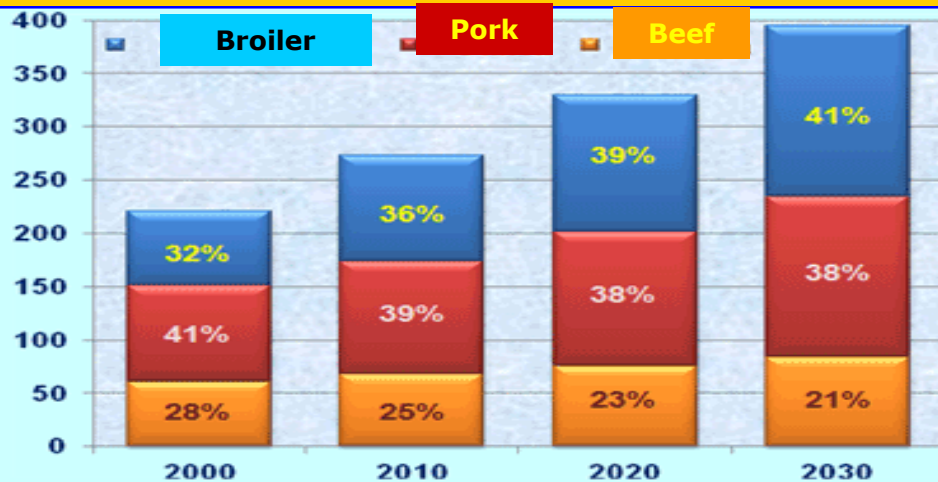
**“The increase in population and personal income in some countries also increase meat consumption that must extend a lot. In China's case, the possibilities are immense for many agricultural items beyond foods and brazilian meat ”**

**World Consumption of meat  
Evolution compared to the population**

**CHINA IN LARGE NUMBERS** - Today there are only 36 cars for every 1.0 million people, compared to 487 in Europe. In next 05 years, China should be to build more 50.0 million new homes. In 2020, only the Chinese middle class is expected to reach 240 million people, twice the current. In 2025, China should have 221 cities with more than 1.0 million persons (compared to 35 current in Europe). In 2012, China positively surprised the World growing 7.8% in a difficult world situation and indicating resumption.



**MEAT - World Trends in demand by 2030 - volumes (million tonnes) and % share in each year**



Fonte dos dados básicos: Rabobank

**For Brazil, produce and export meat is a smart way to add value to grain and to generate more income, jobs, foreign exchange and development of small towns and of country. OUR MEAT IS ONE OF THE CHEAPEST AND HEALTHIEST IN THE WORLD, being most typically family production, especially of calves, chickens and pigs**

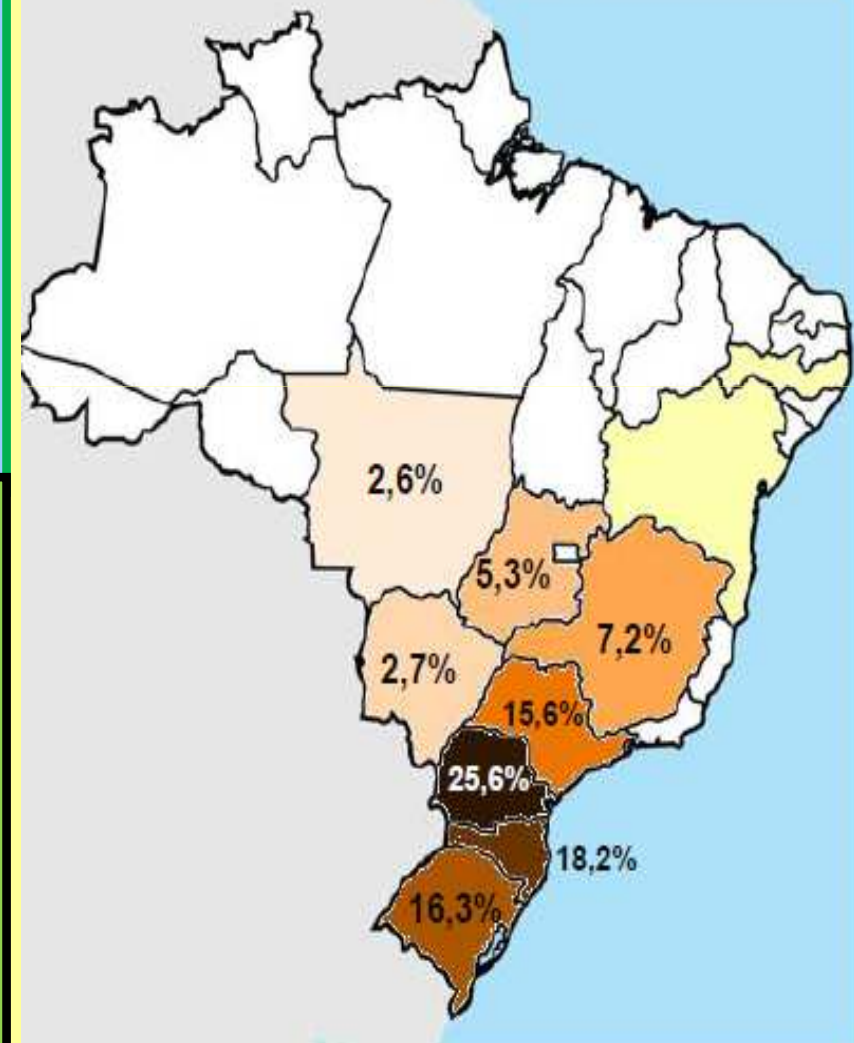


## **THE AGROVISION BUSINESS CONSULTING** - Government, Diplomatic, Companies, Environmental Advising and Audits; Laws; Taxation; Finance; Establishment and Implementation of Holding; Due Dilligences; Business Plan; F&AS; Competitive Intelligence Plans, Selection, Implemen tation and Monitoring of Direct Investments, external or internal, in Partnership in Agribusiness, Mining, Forestry, Energy, Biofuels, Construction and Infrastructure; RSDP/CIDP. (Brasilia-BRAZIL)

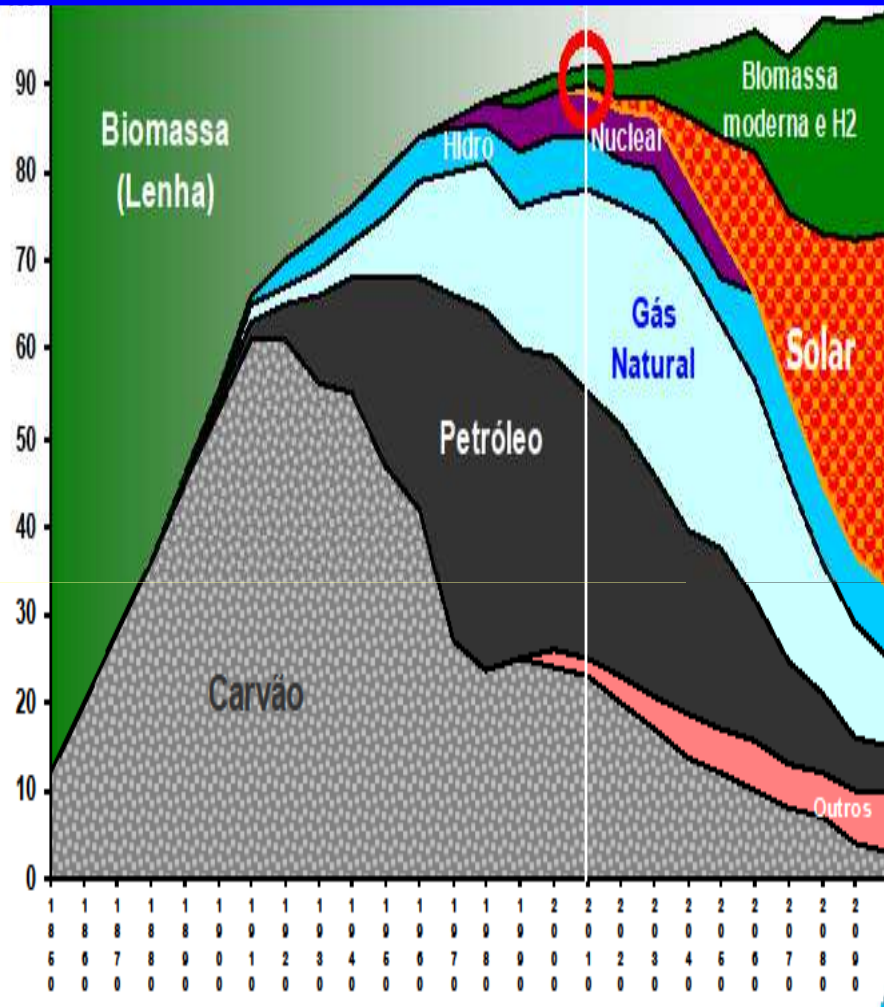
In Brazil, the production and processing of meat, dairy and other foods is still very located in the south of the country, where exactly are the largest populations, but well away from sources of grain for the production of meat and other foods. Due to this the final price at retail are much more expensive and also hinders exports due to high amounts paid for transports and various taxes in chains. Grain production in the Southeast and South has not been sufficient to meet local demand for animal production and others, beyond what has been serious and followed declines regional productive for the occurrence of severe weather problems, sometimes for dry and other times by excess rainfalls.

Due to this both the production of grains such as processed meats and other foods is rapidly expanding also in the Midwest and Northeast, due to lower costs and the extent of migration of populations to those regions and increasing local incomes. With the inauguration of the great railways (mainly toward Peru), ports, power plants and airports in those regions - many in construction - migrations, incomes, demands, tend to further expand, reducing regional production costs (transport and fertilizer much cheaper) and very increasing jobs, revenues with higher sales both to the domestic and to the foreign markets. It is estimated that between 2005 and 2040 about 20 million people arrive or return to those regions, especially young people and adults with good jobs and good incomes and demands.

Annual production of poultry (in%)



# HOW THE WORLD WILL DO WITHOUT COAL, OIL, GAS AND HIDRO?



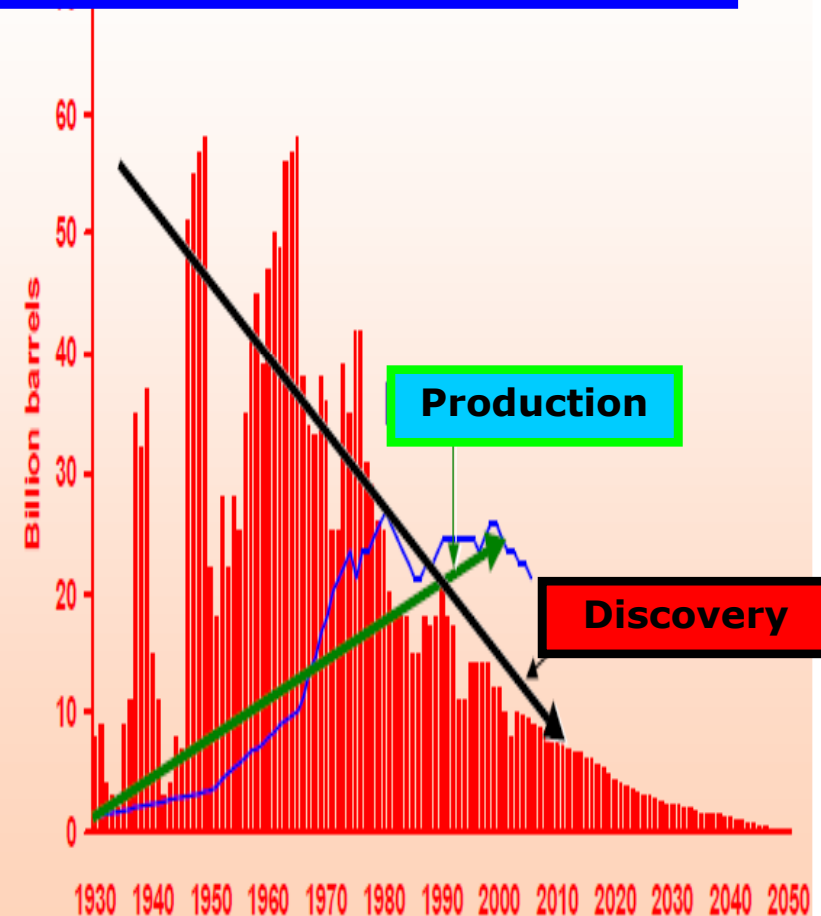
Fonte: Nakicenovic, Grübler and MaConald, 1998

**Evolution of Energy use up to 2.100 (forecast)**

**In 2012, world oil consumption reached 88,8 billion barrels, up from 87,0 billion in 2011.**

# CHEAP OIL UNTIL WHEN?

## RESERVERS "VERSUS" CONSUMPTIONS



**70% of current oil is used in transports and this way of consumption can expand 55% by 2030**





## HOW THE WORLD WILL DO WITHOUT COAL, OIL, GAS AND HIDRO? which may replace them in economic terms and without damage to the environment?

During the 2008 crisis in U.S. prices of oil Brent fell from US\$ 147/barrel in July to US\$ 35 in December 2008. In January 2011 increased to US\$ 180 and now costs US\$ 113 (the price is unreliable and it has trends in high)

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As the U.S. Government the price of oil tends to rise to \$ 300/barrel in 2030 and to US\$ 500 in 2050.

-----

According Studies at FGV Brazil in 2011, the average price of a barrel of oil could rise to us\$ 292 (+99.0%) to us\$ 374 (+154.0%) in 2020. The daily cost of oil exploration is between us\$ 250,000 and us\$ 1.0 million.

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This is very good for Brazil's bioenergies, include ours algae oils and ethanol from biomasses. However, our ethanol prices should rise 126.0% by 2020.

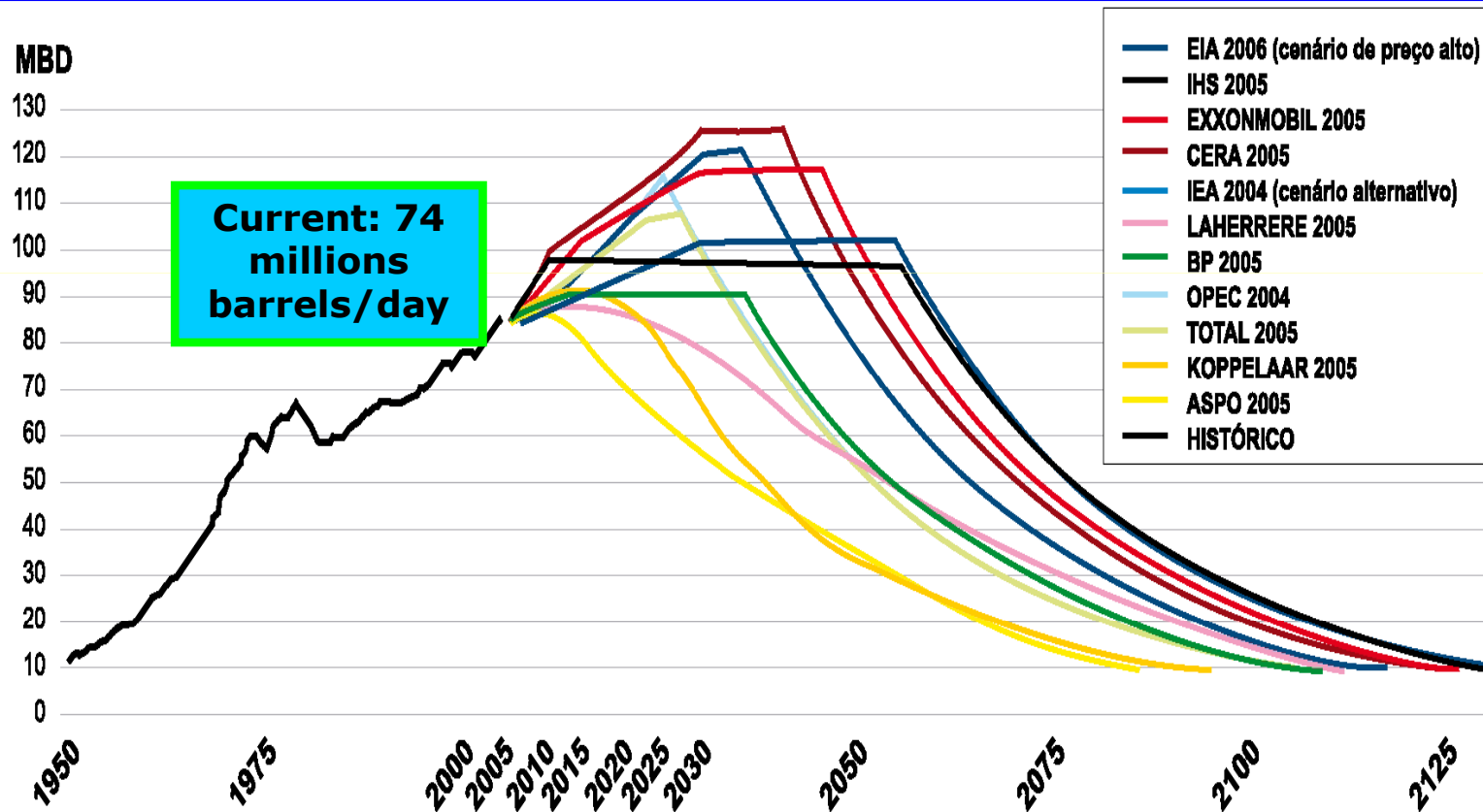
### World 08/2004 - Petroleum - Reserves Situation and time of use forecast by country (in billions of barrels)

COUNTRIES/ ITEMS	Reser ves	Time of uses forecast (years)
Saudi Arabia	262,7	73,3
Irã	130,7	92,9
Iraq	115,0	-
United Árab Emirates	97,8	-
Venezuela	78,0	71,5
Libya	36,0	66,3
Nigeria	34,3	43,1
USA	30,7	11,3
Mexico	16,0	11,6
Brazil	12,6	18,0
Argentina	3,2	11,0



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## World – Oil production forecasts to 2125 according to several source

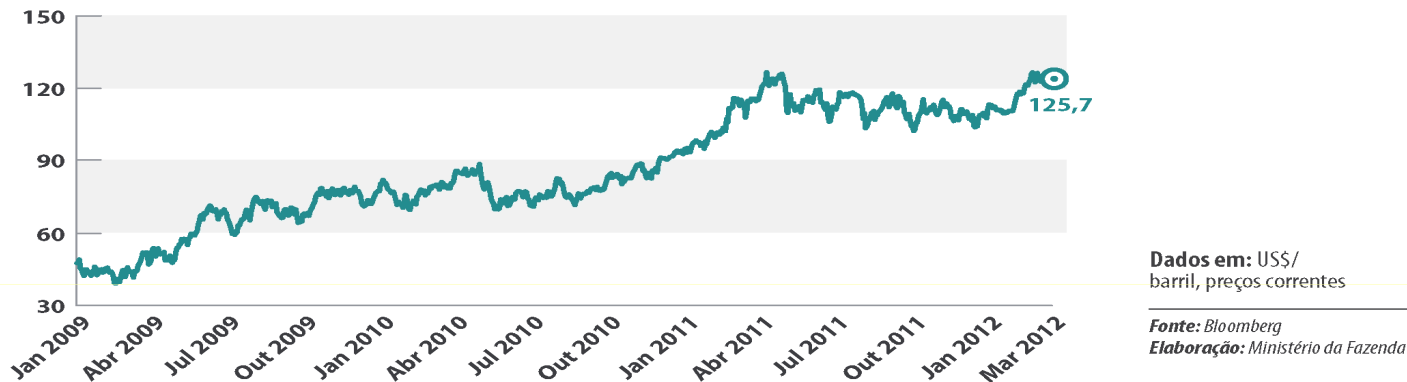


Fonte: Freddy Hutter – [www.trendlines.ca](http://www.trendlines.ca)

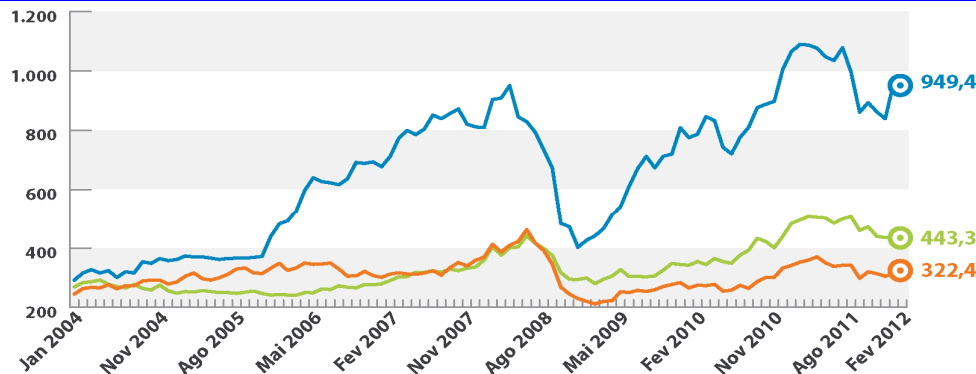


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The brent oil prices are directly linked to the level of global economic activity and tensions in the Middle East. However, since 2009, prices started to rise, indicating greater demands and / or prospects of future shortages.



The worldwide commodity prices are highly dependent, but the significant and steady previous rise in the prices of metals (especially iron) pulled just a little oil prices and especially the food (which prices can go higher, by scarcity)



**The Commodity Research Bureau Index**

— CRB Metais  
 — CRB Spot  
 — CRB Alimentos

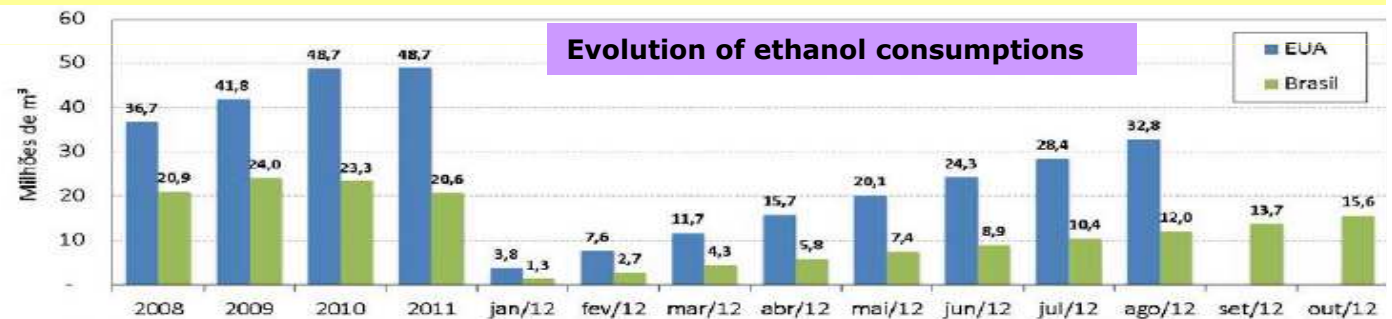
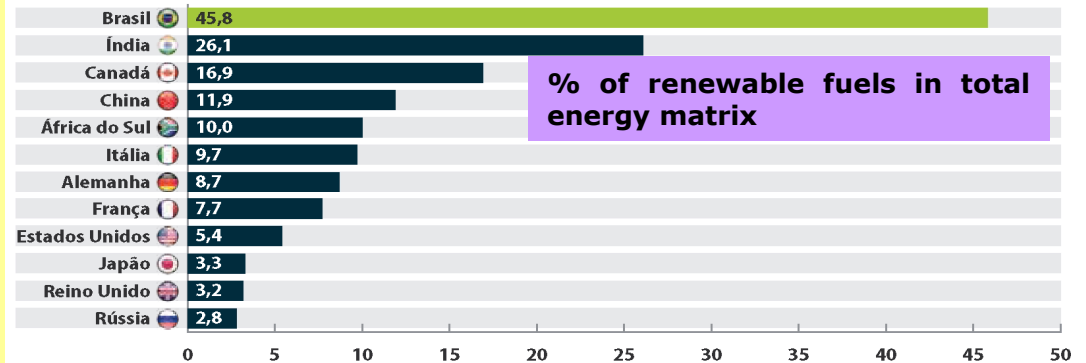
Dados em: número índice, 1951=100

Fonte: Bloomberg  
 Elaboração: Ministério da Fazenda

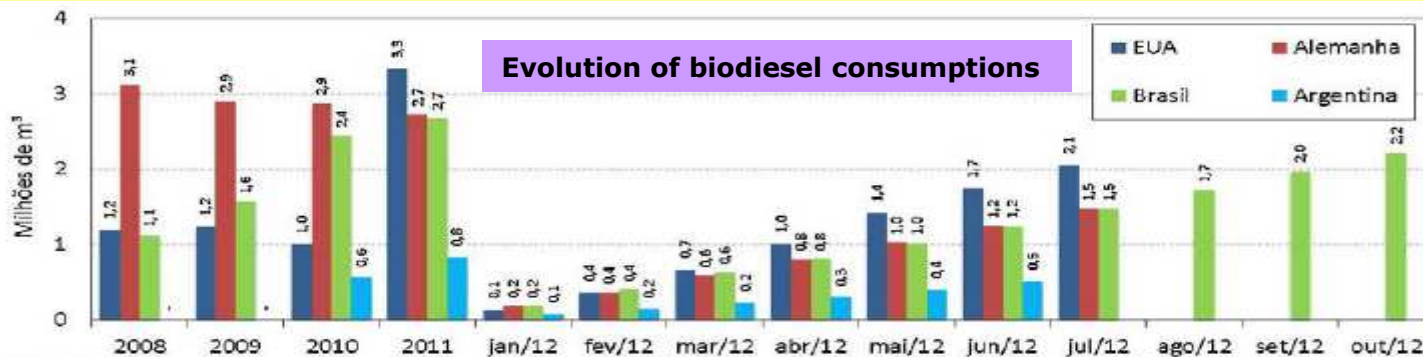


**IN THE WORLD, THE BRAZIL ALREADY STANDS OUT, ENVIRONMENTALLY AND ECONOMICALLY, TO HAVE 46% OF ITS MATRIX IN RENEWABLE ENERGY SO 2009. MOREOVER, THE CONSUMPTION OF ETHANOL AND BIODIESEL ARE HIGH IN THE MAIN COUNTRIES INDICATING HIGH ENERGY AND ENVIRONMENTAL CONCERNS (GREAT MARKETS FOR BRAZIL)**

**Global production capacity of advanced biofuels is expected to reach 94,5 million liters in 2014 (250 million gallons). Brazil expects to double its output of ethanol by 2020 to meet the growing demand from both domestic and export markets.**



Elaboração: MME  
Fontes: MAPA, EIA/DOE Obs.: Os valores mensais são acumulados.



Elaboração: MME

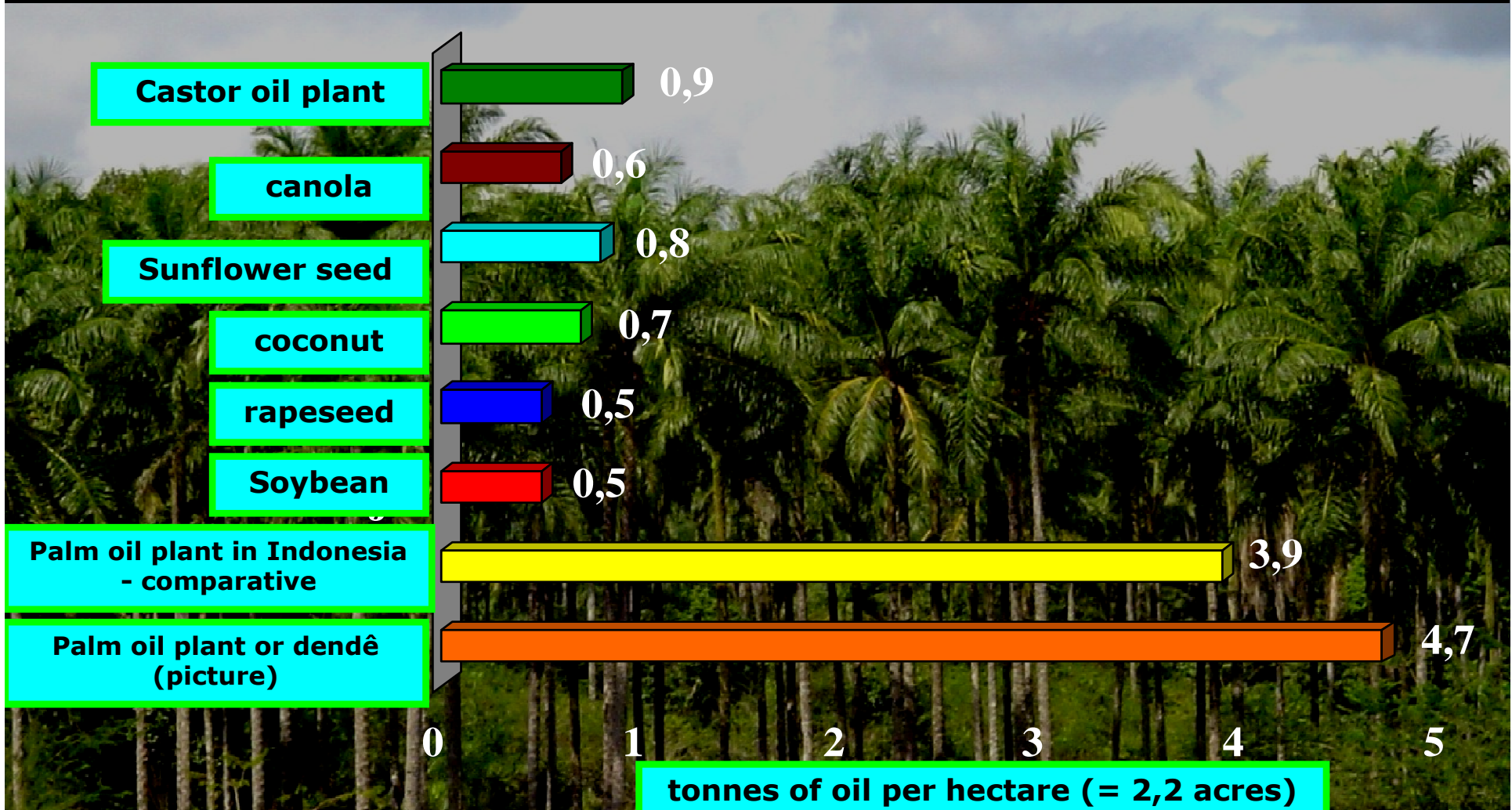
**The Ethanol and biodiesel fuels productions more castor oil for polymers, specials resins and biodegradable lubricants for aeronautics and space industries. All these items have high productive potential inside poorest regions of Brazil. Actually, the Northeast and the North already should have many poles to incentive, to purchase and to manufacture polymers of castor bean more ethanol from cassava or biomass, inclusive eucalyptus and others cultivated and fast trees. Without doubt, in addition to reliable and cheap logistics and energy offers, the best way to develop quickly and safe poor regions and its peoples are attracting and encouragement reliable agro industries for local installations in permanent, safe a really gainful forms. Just a great local social cost reduction more victory against hunger pays any publics and private incentives.**



**Possible incentives to produce more biodiesel from oilseed plants (several palms, pequi, avocado, castor, new *Jatropha* improved by EMBRAPA etc.) more special algae, most non-edible, non-competitive with food areas, with more oil and more yield than soybeans. The best current option is especially castor oil and big additional ethanol productions or biodiesel from algae-eating CO<sub>2</sub> plants, coupled to ethanol cane plants / sugar / biodiesel, food factories, pulp, cement, power plants, agrochemicals, fertilizers etc. from external technologies already mastered. ALL IN ORDER TO GENERATE MORE JOBS, REVENUES AND REGIONAL DEVELOPMENT.**



# Brazil - Raw materials for biodiesel - Comparison of average yields in t. oil/ha of different sources of vegetable oil (edibles & not-edibles)



In 2011, Brazil - that still has 5% of biodiesel in the fuel mix - was the world's largest consumer of biodiesel, with 2.8 billion liters, followed by Germany with 2.6 billion. With 20% of biodiesel in the mixture (as occurs in Germany) AS EFFECT OF REMEDIATION, Brazil are avoided 11 000 deaths and 78 000 hospitalizations of people each year.

## **Northern Region- The Amazon sustentable palm oil cultivate**



**In 2030, the world potential demand for ethanol and biodiesel may be between 242.0 and 556.0 millions tons / year, to replace only between 10% and 24% of demand for gasoline and diesel, respectively.**

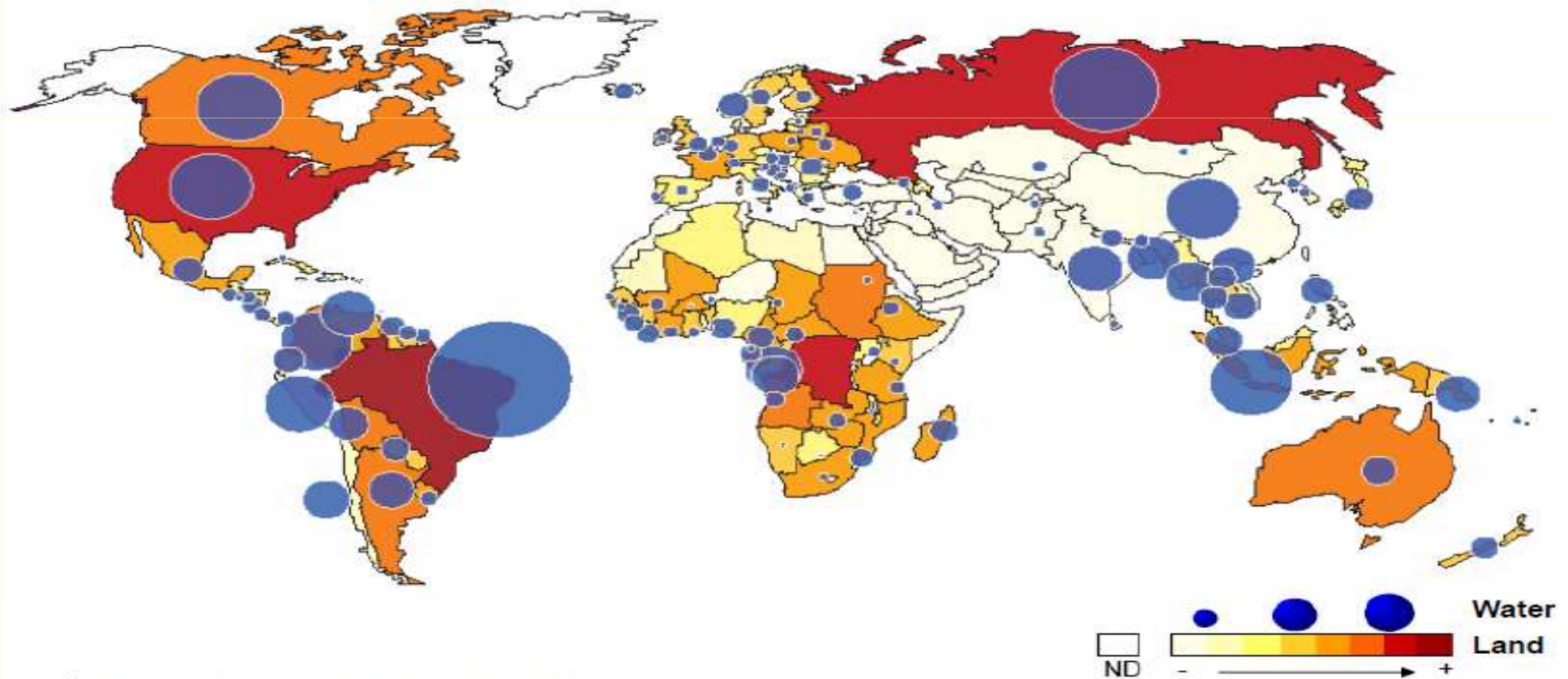
**The U.S. wants to replace 15% of the consumption of petrol by biofuels in the next 10 years (= 99.8 million tons / year)**



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## WORLD: Combined availability of land and water in 2007

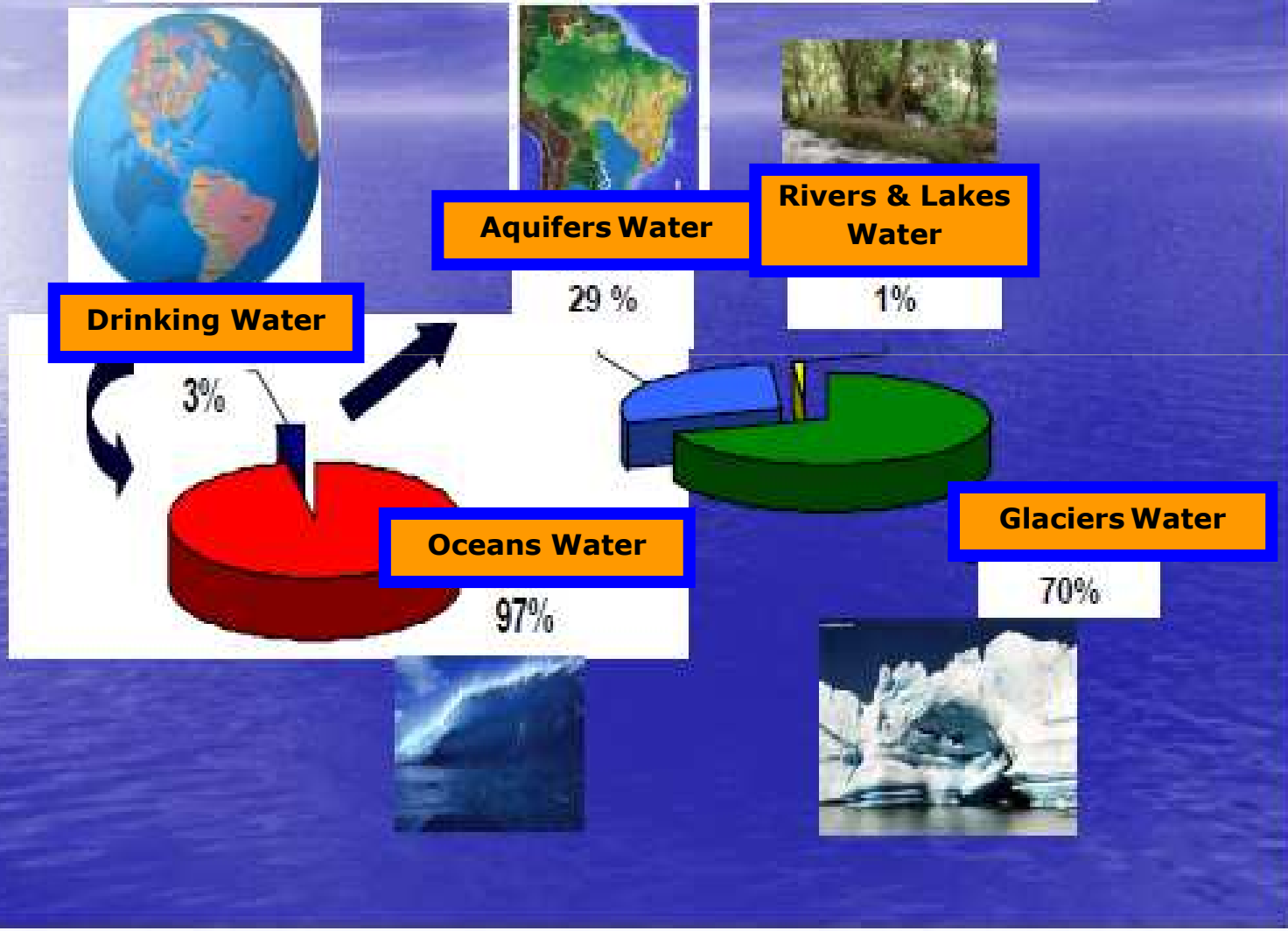
**Only Brazil, China and the U.S. still have good quality land and plenty of water available. However, only Brazil still has many areas still unused, non-degraded or without glaciers / lots of snow**

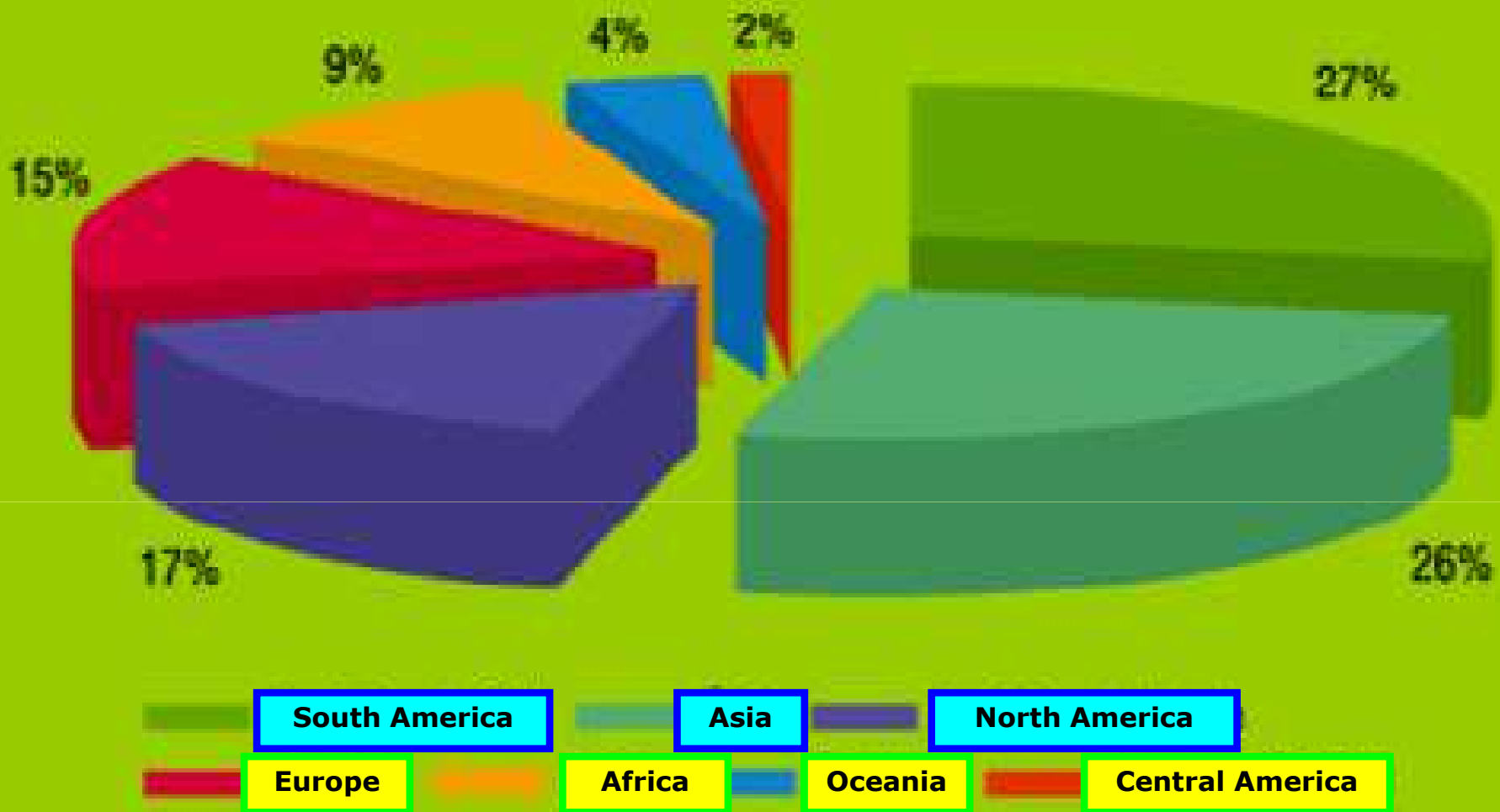


Source: FAO (2000); FAO (2007). Elaboration: ICONE



# WORLD – DISTRIBUTION OF DISPONIBLE WATER HIGHLIGHTING THE HIGH PERFORMANCE AND BIG RESERVES OF BRAZIL

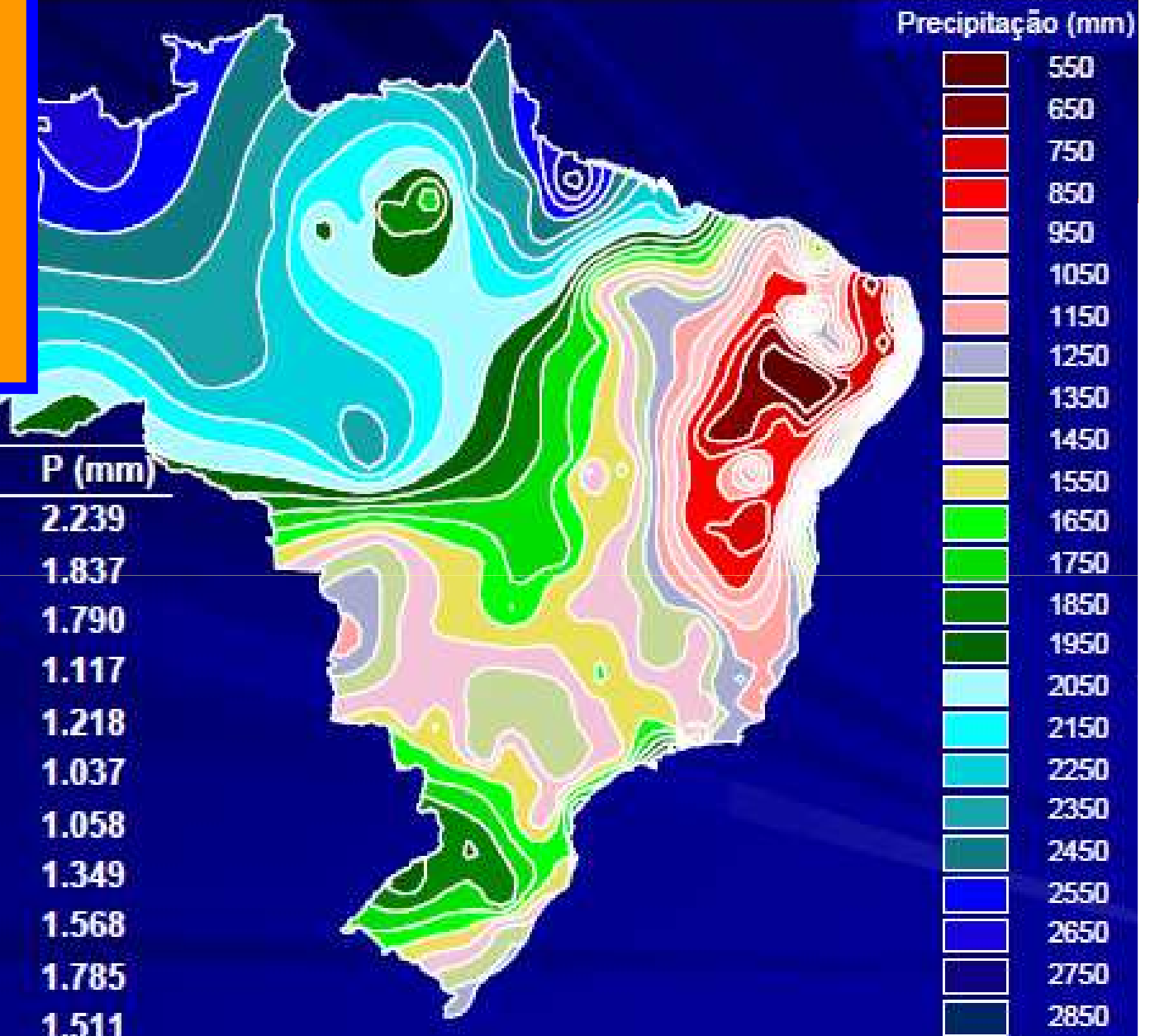




**RELATIVE % DISTRIBUTION OF RENEWABLE WATER RESOURCES IN THE CONTINENTS**

**Brazil –  
Annual  
rainfall level  
by micro-  
regions  
(in mm p.a.)**

Região	P (mm)
Amazônica	2.239
Tocantins	1.837
Atl. NE Ocidental	1.790
Parnaíba	1.117
Atl. NE Oriental	1.218
São Francisco	1.037
Atl. Leste	1.058
Atl. Sudeste	1.349
Atl. Sul	1.568
Uruguai	1.785
Paraná	1.511
Paraguai	1.398
<b>Brasil</b>	<b>1.797</b>





ANA

AGÊNCIA NACIONAL DE ÁGUAS

# Brazil – Annual water availability

Rate %  
consumed water /  
available water





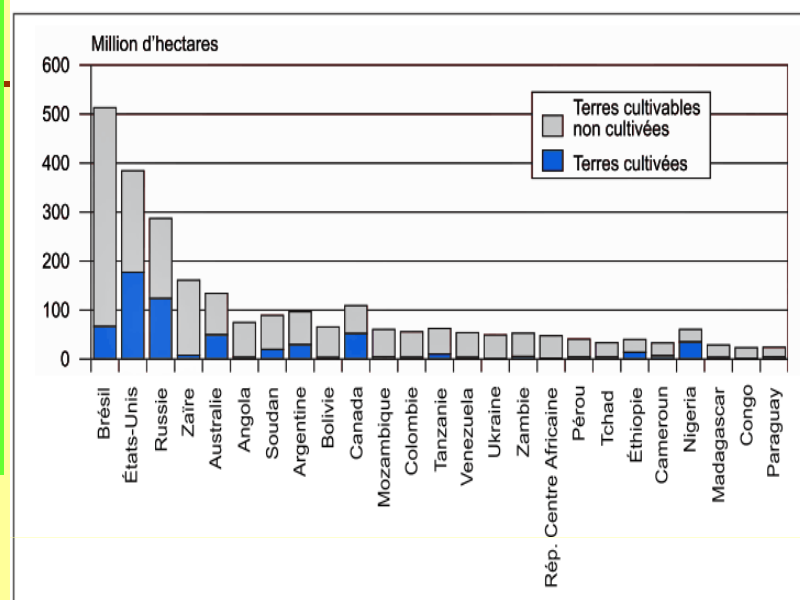
**"In Brazil there are fully capable of sustainable and fair productions to feed well the poor and to create jobs and income in regions little rain and even without irrigation. For this, only lacking real and constants incentives, higher sensitivity and social responsibility (including courts) and immediate expansion of some serious and sustainable projects already underway with incentives to plant crops and to install agro poles and / or processing cooperatives, provided that serious and just meant for the markets “**



**Even in regions with few rains named "Semiarid Northeast" (total of 90.0 million hectares to some authors) have full conditions for sustainable and socially just productions with low rainfall and / or with small irrigation. Some cultures like the Australian forage atriplex or “salt plant” (with 17% crude protein in their leaves to feed local goats, sheep, cattle etc.) produce mass up to 5.0 tons / hectare / year and this with only 300 mm of rainfall per year. Already with irrigation, even with salt water and coming from deep wells, production may reach 20.0 ton. / hectare / year. Also in some cities, governments install deep wells with desalinators to quench the thirst of humans and that salt water left is used for the cultivation of sea shrimp over atriplex. What are missing are more public incentives, private investment, and especially serious projects. Of the 15 billion cubic meters of annual rainfall in the Northeast Region: about 90.0% percent evaporate; 9.0% fill the beds of streams and rivers and only 1.0% infiltrates the land. Still, under the Northeast run two great rivers between 50 and 350 feet deep. However, the courts and other agencies also always afflict such projects and paralyze such works for many years and has been for almost 50 years and since the creation of SUDENE The Northeast Development Superintendence.**

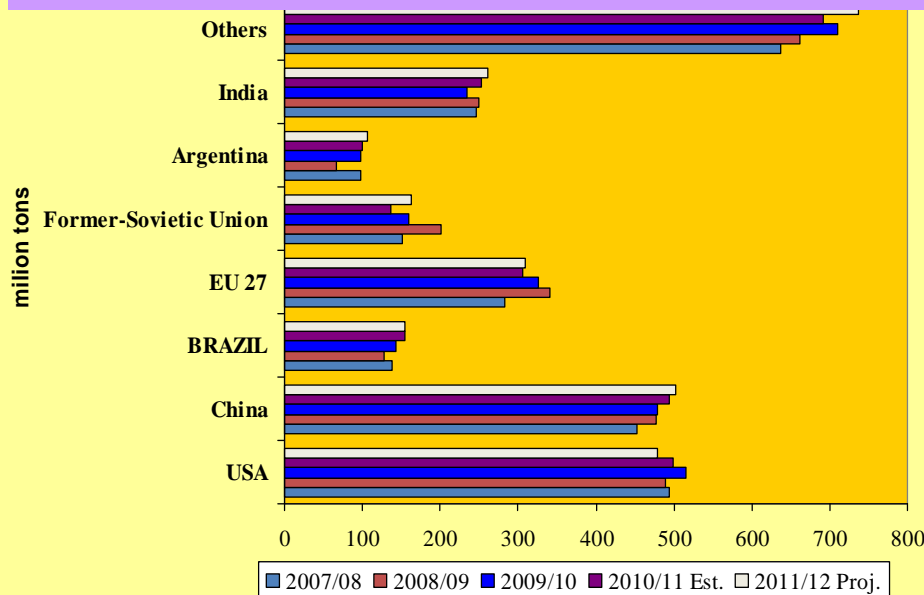
**“Brazil is one of the few countries of world that still can greatly enhance the sustainable production of grain, food, wood, biofuels and other rural items”**

**Brazil has a lot of conditions to expand rapid the production and offerings to the world, since, really, leveraged buyouts, encouraged and empowered. The rural net income must be guaranteed by comprehensive insurance income, as in the U.S. and EU, but amazingly there is not in Brazil, despite the fundamental importance of agribusiness to our economy.**



Sources : d'après GAEZ, SAGE

**Evolution of the Brazilian and others countries participations in world volume production of grains and oilseeds**



**Even with agribusiness being our socioeconomic and exporter engine, our participation in world grain production is still timid and distant from that of competing countries. Our production could expand much more, with more extensive resources and programs Income Guarantee.**



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## BRAZIL – VERY MUCH OPPORTUNITTIES FOR INVESTORS

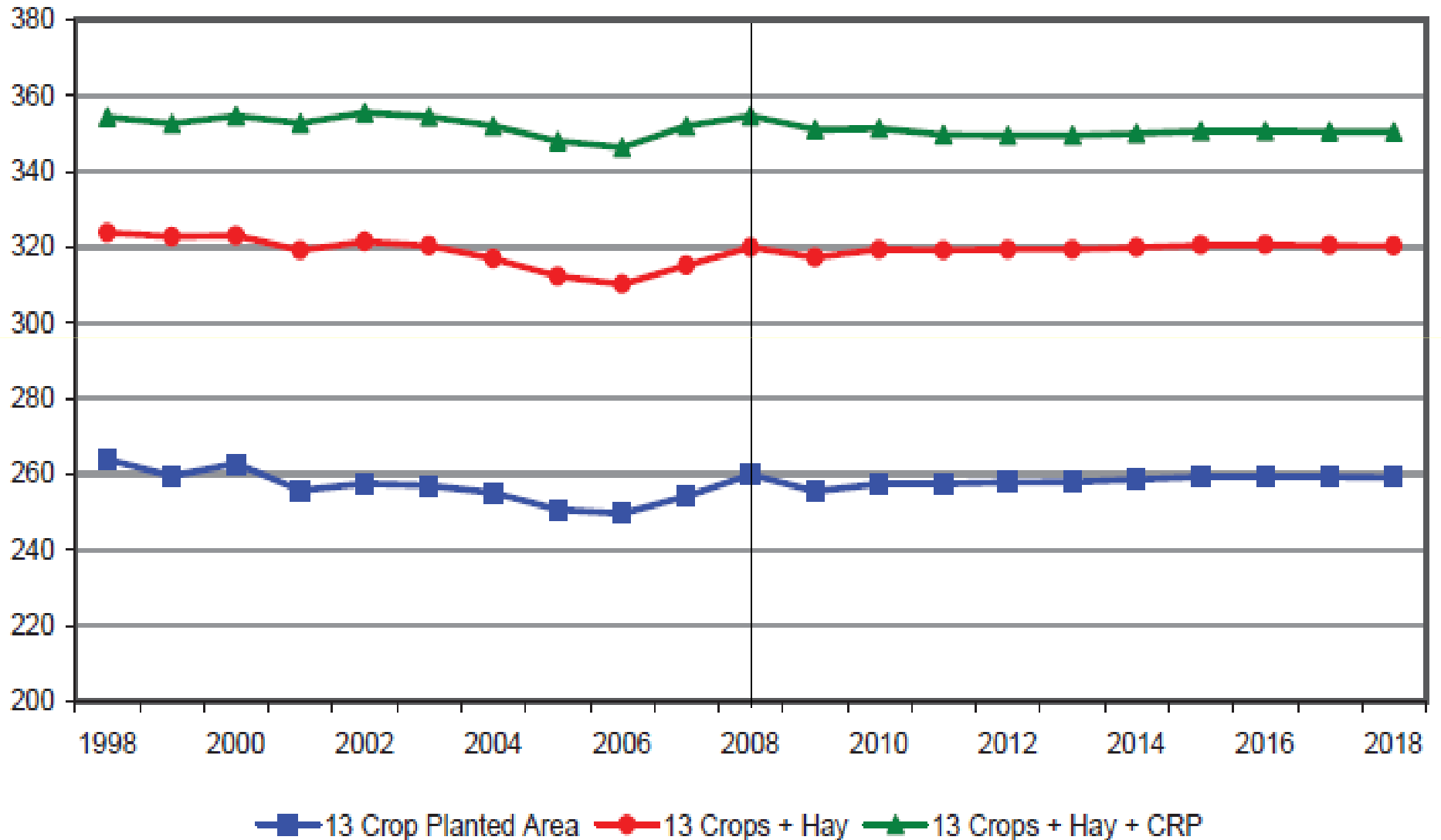
**2006 – Grains – Major producers – Available Arable Land (millions hectares)**

COUNTRIES	Total Arable Area	Availabe Area	Occupancy rate %
China	138,0	<b>0,0</b>	100,0
Índia	169,0	<b>0,0</b>	100,0
EUA	269,0	<b>81,0</b>	70,0
Canadá	76,0	<b>30,0</b>	61,0
Rússia	220,0	<b>88,0</b>	60,0
Austrália	84,0	<b>37,0</b>	56,0
<b>Brazil</b>	394,0	<b>329,0</b>	16,5
<b>TOTAL</b>	<b>1.350,0</b>	<b>565,0</b>	58,1

**In addition, our land distribution is more equitable. While in Canada, United States, Argentina and Australia have together 2.7 million farmers, in Brazil are 5.1 million farmers with an average area of 67 hectares, compared to the average of 220 hectares at those competing countries.**

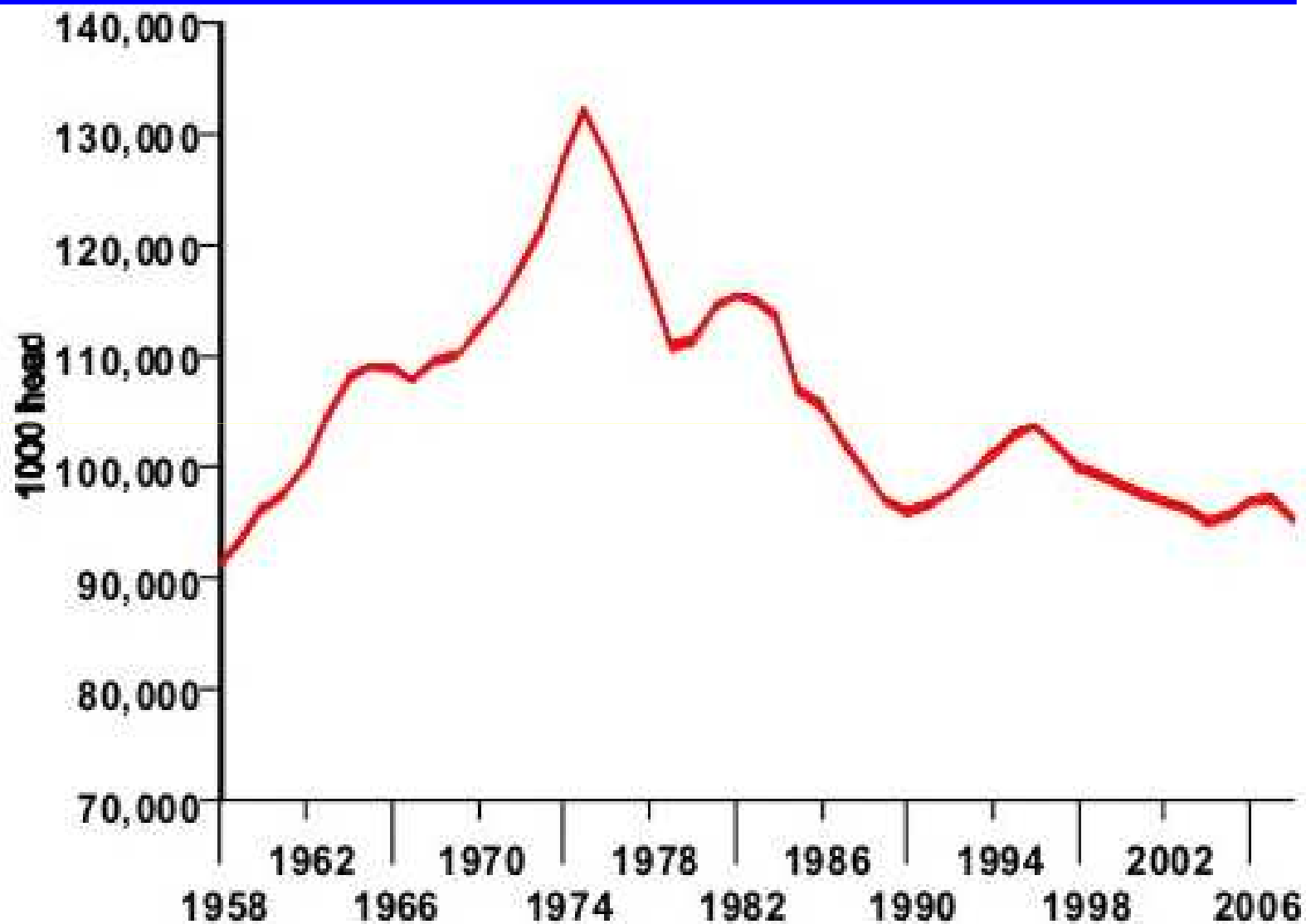
# U.S. Land Use

Million Acres





## USA - Herd beef cattle evolution



Fonte: Copyright Sterling Marketing, Inc. 1991-2008

# BRAZIL = grains + foods + bioenergy + timber + fruits + others ag. – POTENTIAL PRODUCTION ON ENVIRONMENTAL AND SOCIAL SUSTAINABILITY



Elaboração – revista VEJA edição 03.03.2004

## TERRITORIAL DISTRIBUTION ESTIMATES

(million ha)

AMAZON FOREST	350
NATURAL PASTURES	220
AREAS PROTECTED BY LAW	55
TEMPORARY CROPS	47
PERMANENT CROPS	15
CITIES, LAKES, SWAMPS AND ROADS	20
CULTIVATED FORESTS	5
	<b>707</b>
OTHER USES	38
NOT YET EXPLORED AREAS BUT AVAILABLE FOR AGRICULTURE	106

**TOTAL 851**

**Total available area = 206.0 million ha including 100.0 of degraded pastures + 106.0 million with no crops**



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Without considering the bioenergies crops (ethanol, biodiesel, eucalyptus) and others (coffee, fruit, vegetables, forestry, livestock etc.), Brazil has **POTENTIAL TO PRODUCE MORE THAN 1.0 MILLION T. OF GRAINS /YEAR** with better exploitation of the area and increasing productivity. Everything would occurs in a socially, environmentally sustainable and fair sistem (outside the Amazon rainforest). WE NEED CHEAPER, QUICK AND RELIABLE TRANSPORTS, ABOVE APROPRIATE FERTILIZERS TOO.

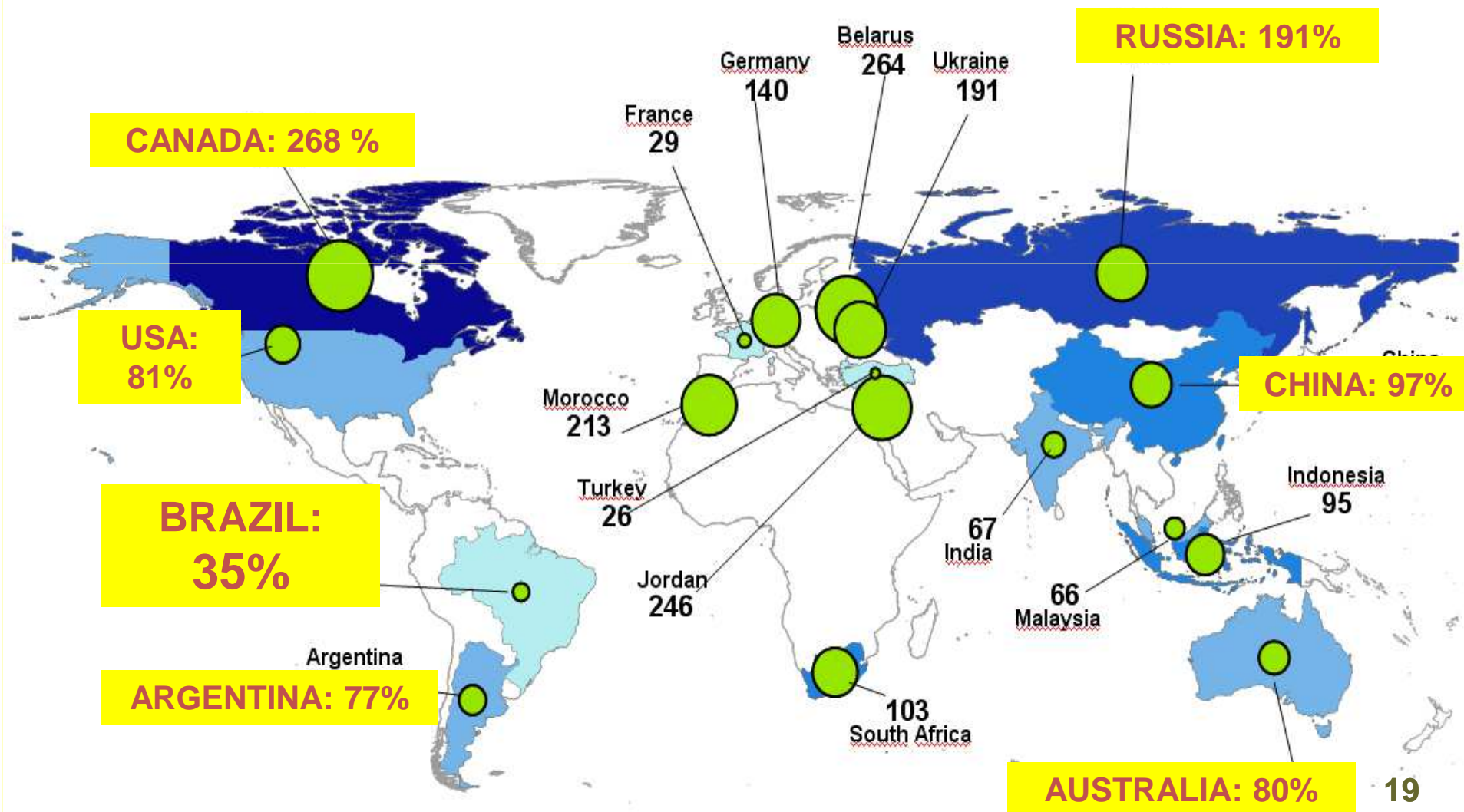
2050 Land Occupations forecast		Million hectares	
		Milhões de Hectares	
		2005	2050
Temporary crops			
Permanent crops			
areas still available for agriculture		47	250
Natural Pasture areas (in use+degraded)		15	30
TOTAL AG. AREAS		100	0
		220	102
Grains Area and Production forecast		382	200



Source: Studies of Consórtium Valmont

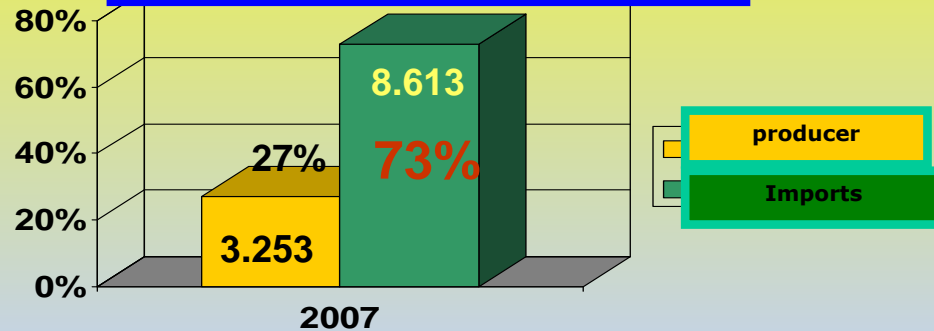
# BRAZIL – FERTILIZERS - CURRENT OUR SECOND MAIN AGRICULTURAL WEAKNESS, BUT WITH NEXT SOLUTION TOO

World – Major Countries – 2006 - Fertilizers - Participation of NPK Production in the Domestic Consumption. (%)

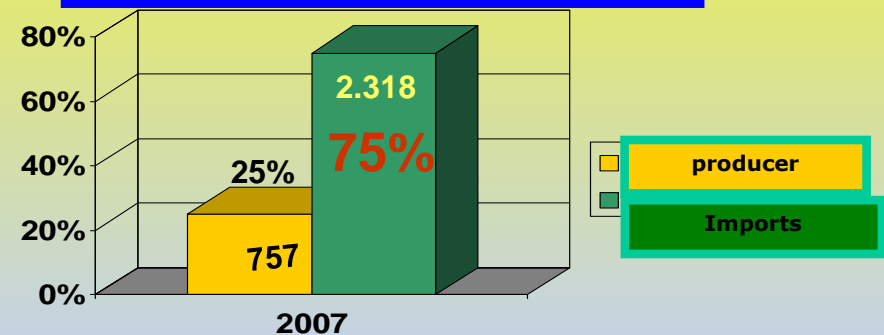


**Brazil - Fertilizers - Our second bigger weakness (the first is bad and VERY EXPENSIVE logistics) by our high dependence for expensive imports. Nevertheless will be possible our self-sufficiency in 9 years, since with full, efficient and cheaper logistics and, mainly, real determination of the Government to require very much and to encourage the companies**

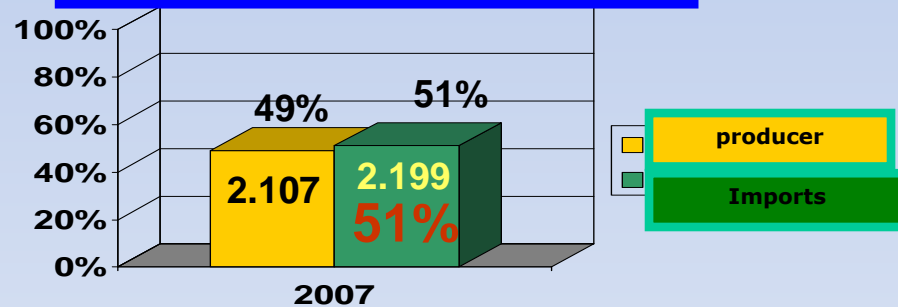
**NPK Total (% and mil ton)**



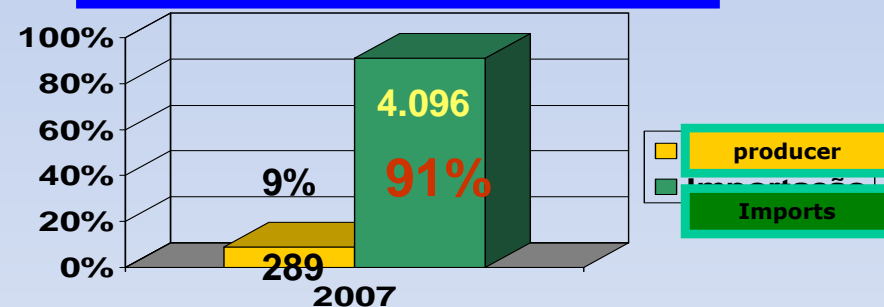
**Nitrogenous (% and mil ton)**



**Phosphates (% and mil ton)**



**Potassium (% and mil ton)**

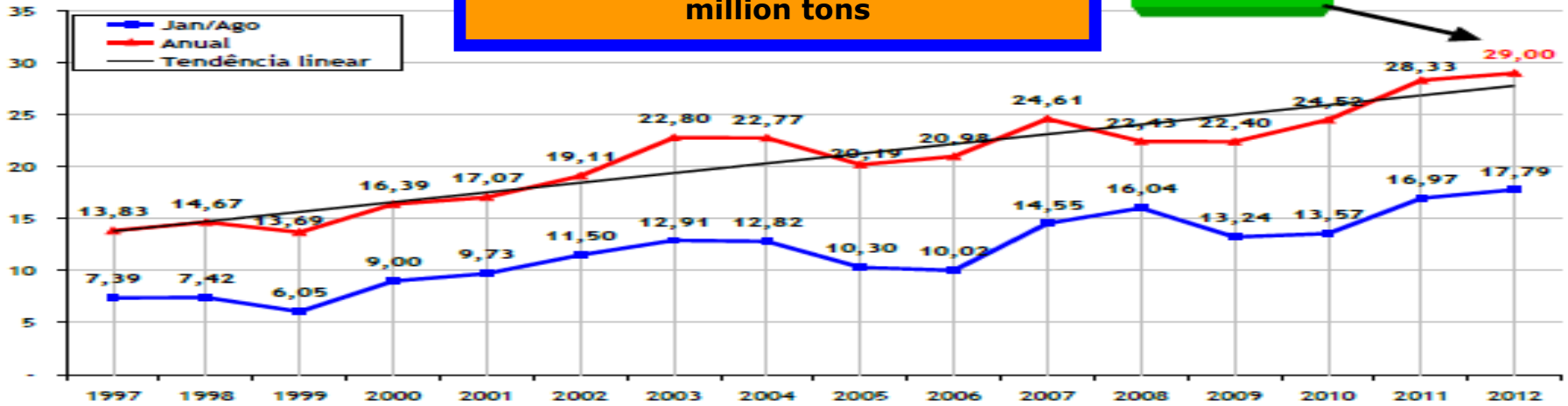


**In 2012, sales should have reached 29.0 million tons, a record, with about 60% still imported on the possible value of US\$ 10.9 billion FOB. In 2011, sold 28.3 million and in 2010 sold 24.5 million t. Average prices in 2012 may have been about 4.0% higher than in 2011 in US\$. It is estimated that by 2016 the industry should invest about US\$ 13.0 billion in more producing fertilizers in Brazil, but the previous promises to the Governments of self-sufficiency in more 9 years are routinely disobeyed by large companies, setting up more marketing actions and only when domestic prices explode. Another big problem is the grains and sugar trading because they need to fill their ships in return to Brazil.**

**"Our current good productive results are due uses of the high quality brazilian technology, but there is still much to expand and in many rural activities"**

**Evolution of fertilizer sales - million tons**

ESTIMATIVA RC Consultoria



Fonte: RC Consultoria  
Elaboração: CONAB

**"In growing crops, there was substantial agricultural increase in the uses of modern machinery too, but our average productivity is still very low compared to competitors, except in soybean, coffee, cotton, sugarcane and meat chicken. Will be much more technology investments and in your adoptions"**

**Evolution of tractor more combines sales - ud**

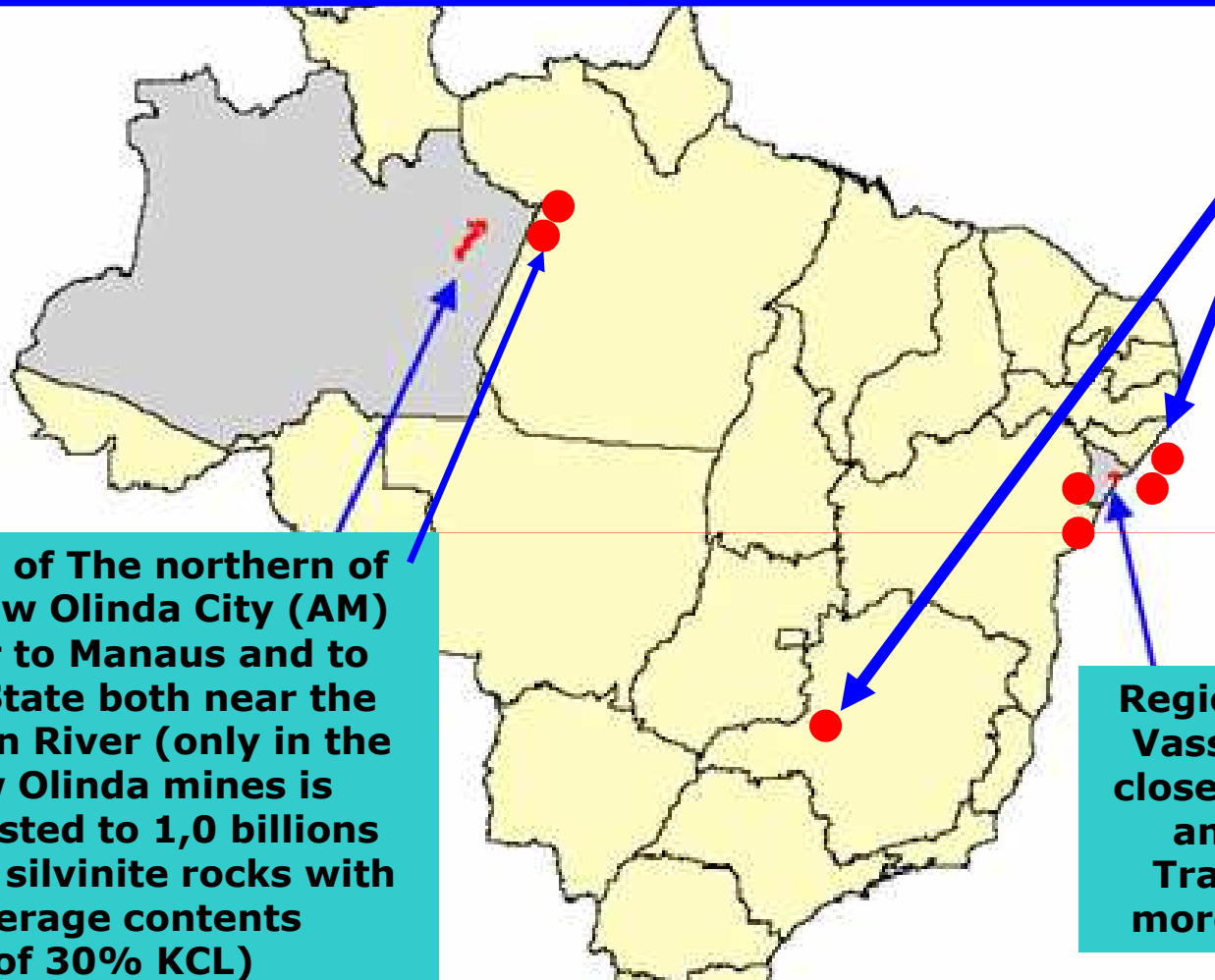
ESTIMATIVA ANFAVEA



Fonte: Associação Nacional dos Fabricantes de Veículos Automotores - ANFAVEA

# NEWS POTENTIAL MINES OF POTASSIUM

(using the freight of transports of food, grains and ethanol + biodiesel energies)



Potential new mines at the coast of the States of BA, PE, SE & AL, closer to fruits and sugar cane irrigated areas, and more in northwest of State of MG

Region of The northern of the New Olinda City (AM) closer to Manaus and to Pará State both near the Amazon River (only in the New Olinda mines is forecasted to 1,0 billions tons of silvinitic rocks with average contents of 30% KCL)

Region of The Taquari-Vassouras Cities (SE) closer to atlantic ocean and near the new Transnordestina Rail more the FCA old Rail

In July/2011, only in State of São Paulo, the VALE decided to invest an additional US\$ 2.0 billion on new terminal for grain, sugar and fertilizer whose bid will be tripled. Already the Government Dilma demanded an immediate start to the new potassium mines in State of Sergipe, in State of Amazonas and in State of Minas Gerais. The VALE also has a new giant potash mine in Argentina and will begin production in 2013.



**PHOSPHATE FERTILIZERS –**  
**Current potentials**  
**new mines**  
 (using the freight of transports of food, grains and ethanol + biodiesel energies)

**Current map of location of the phosphate rocks**

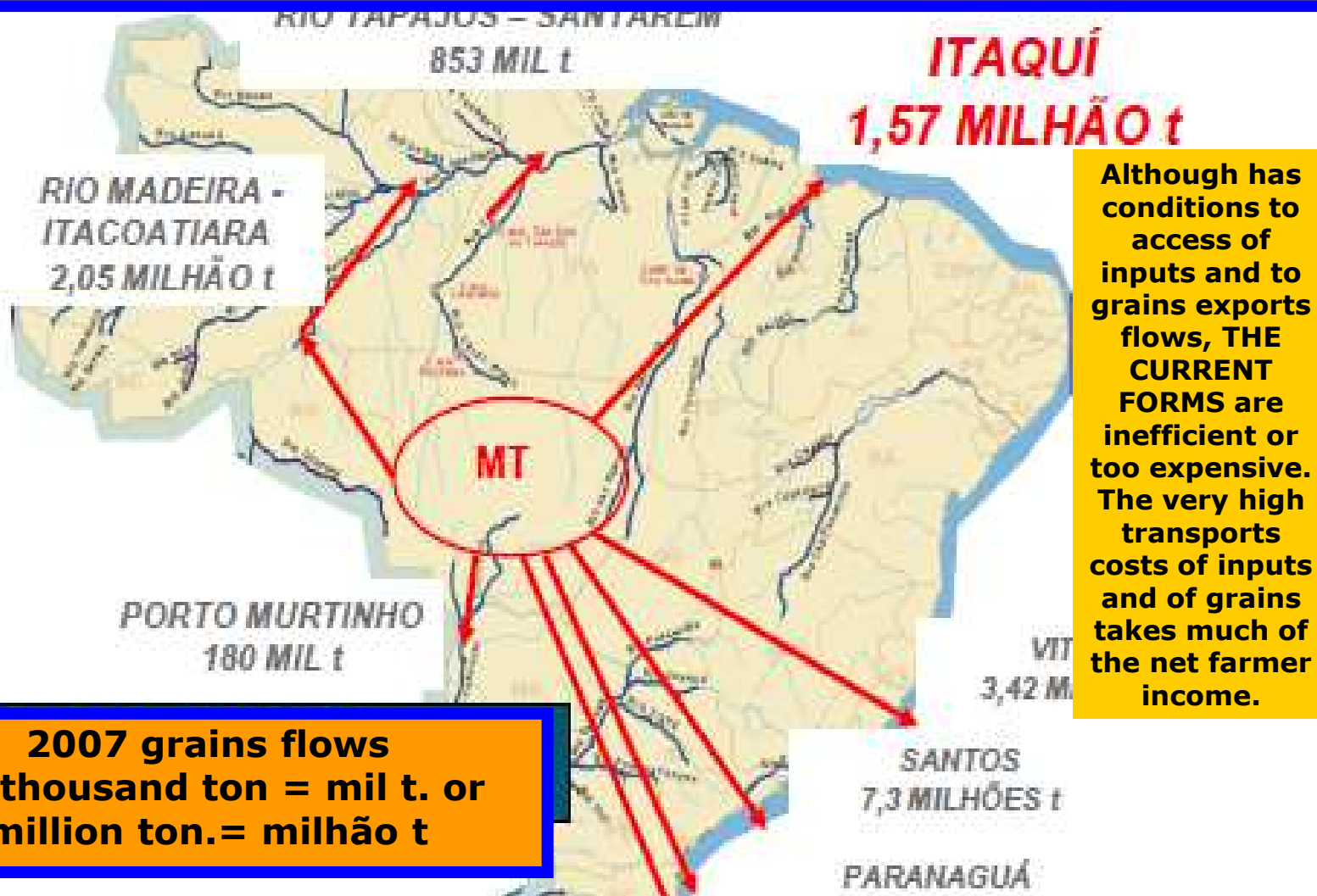
**Legenda**

	<b>apatite</b>
	<b>natural phosphate</b>
	<b>phosphorite</b>



# BRAZIL – TRANSPORTS IS THE MAIN AGRICULTURAL CURRENT WEAKNESS, BUT WITH NEXT SOLUTION TOO

The State of Mato Grosso – 2007 - Soya productions -  
Diferent conditions of road transportation under  
corridors until the Export Ports



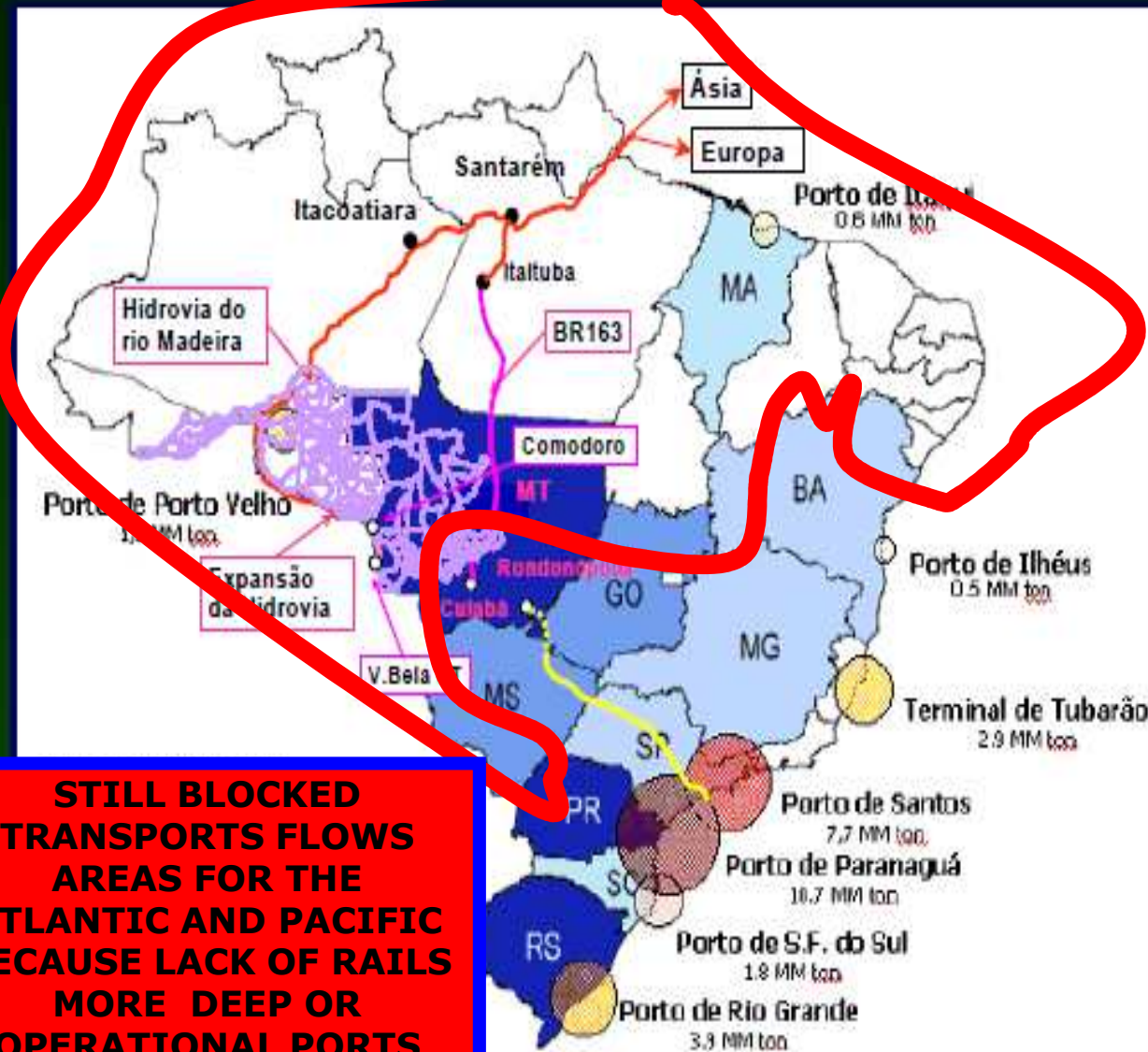
**Brazilian Grains, Foods, Timbers & Bioenergies Flows 2012 (soy, corn, meats, dairy, ethanol, timbers, sugar etc..) are STILL VERY EXPENSIVE AND DIFFICULT, VERY REDUCING OUR INTERNATIONAL COMPETITIVENESS AND INCREASING VERY MUCH OUR PRODUCTIONS & PROCESSINGS COSTS**

**Our area STILL with logistics locks represents about two thirds of the country and needs serious investors in transport, energy, mines, and especially in processing agroindustries which want to earn much money and to ensure their provisions (on DIRECT Investments or on PARTNERSHIPS WITH FARMERS)**

**Due to logistical STILL lock, the cost of transporting soybeans from Sorriso (MT) to the Port of Santos in 2011 stood at \$ 120 / t, compared with U.S. \$ 20 / t cost of the field to the port in Argentina.**

**In late 2012, the cost of road freight inside the MT to the Port of Santos was so high that represented 40% of the sale value of the standard load with 37 tons of corn. The trucks were charging \$ 3,800 for shipping, before \$ 10,200 of the value of the cargo.**

**STILL BLOCKED TRANSPORTS FLOWS AREAS FOR THE ATLANTIC AND PACIFIC BECAUSE LACK OF RAILS MORE DEEP OR OPERATIONAL PORTS**



**In the case of Brazilian highways, by successive errors of previous plans; for lack of resources, and especially by not prioritizations, our public highways with about 1.5 million km (one of the largest networks in the world) are hardly paved (only 13%) and most already paved are bad conserved, except those already privatized (hence this is the priority of the current government). In recent years, our priorities needed to be sanitation, health, education and well feed the poorest. In october/2012, Brazil had 68.000 kilometers of paved roads with problems among the 100.000 km evaluated.**



**Trucks wait up to 3 days to unload grain, sugar etc. in Ports. Already ships wait up to 30 days**



**Trucks wait until 2 days connected to the electrical outlets after unloading perishable foods in supermarkets.**

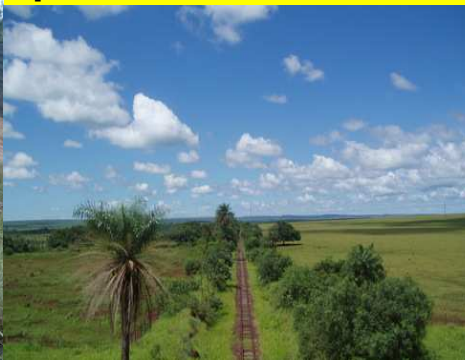


**In the U.S. logistics costs represent 8.0% of GDP while in Brazil reaches 12.0% of GDP (much smaller than the U.S.). Only Brazilian companies would save up to US\$ 83 billion / year, if they had a functioning logistics as well as in the U.S.. In Brazil, companies spend on average 13.0% of their revenues with logistics, compared to only 7,5% in the U.S., but in Brazil the capital goods industries spend 22,7%, the building sector spend 20,9% and the mining companies spend 14,6%, according to recent studies.**



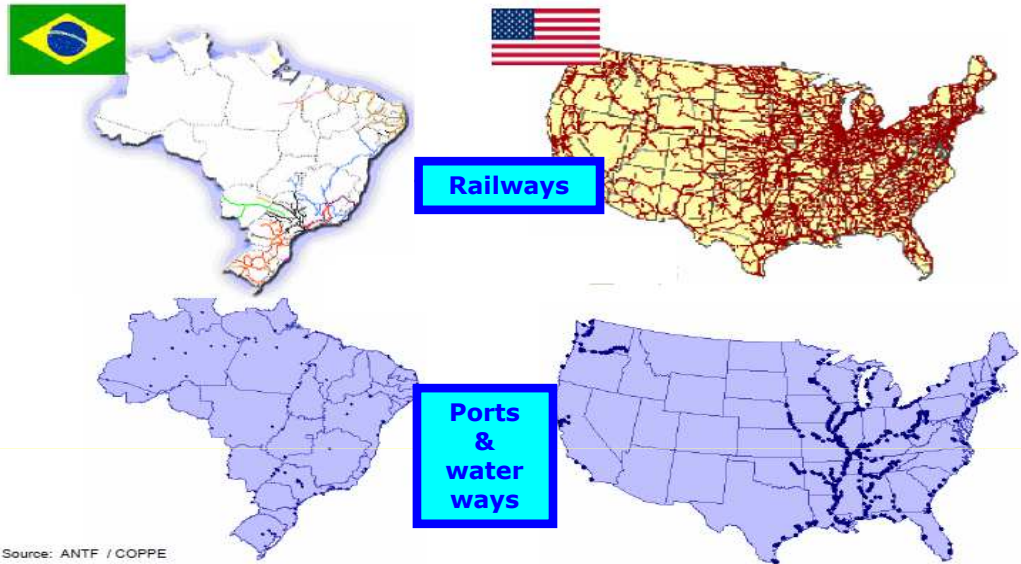
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**In the case of Brazilian Railways, since 2010, there is a great legal, marketing and operational war between the current government and the concessionaires of the railroads, wrongly privatized in 1996 (no performance criteria, without clear obligations for expansion / renovation / service and without granting free circulation to all the tracks of each dealership, very harming the country and its people and has for 16 years). In all, 6 dealers hold 97.0% of 29,000 km of Brazilian rail mesh and in which, theoretically, applied R \$ 28.6 billion in last year until 2011, compared to only R \$ 1.4 billion by the Government. Now, the Government intends to rapidly expand the rails to 49,000 km, but it is estimated that country need for 52,000 km and all operational. In 2012, the dealers theoretically invested R \$ 5.3 billion, but the government announced investments of R \$ 37.0 billion over the next 6 years, or an annual average of R \$ 4.6 billion. However, this sector needs a total investment of U.S. \$ 80.0 billions. The government in June/2012 also demanded immediate recovery of 5 thousand km of railroads abandoned, especially by dealers the ALL (private), the FCA (semi state-owned ) and the Transnordestina (private), as contained in the new Law. Also, through a new law, Government will require businesses to allow the free movement to wagons of other companies in 6 dealers tracks. Really it is a great war.**





**IN USA AVAILABILITY OF PORTS, RAILS AND ROADS IS GREATEST GOOD, AND BETTER, THAN IN BRAZIL, BUT THE MODAL MORE USED IN THE U.S. IS STILL A WATERWAY WITH 60.0% OF FREIGHT (AGAINST ONLY 11.0% IN BRAZIL AND HERE MORE TO SUPPLY RAW-MATERIALS FOR BUILDING)**



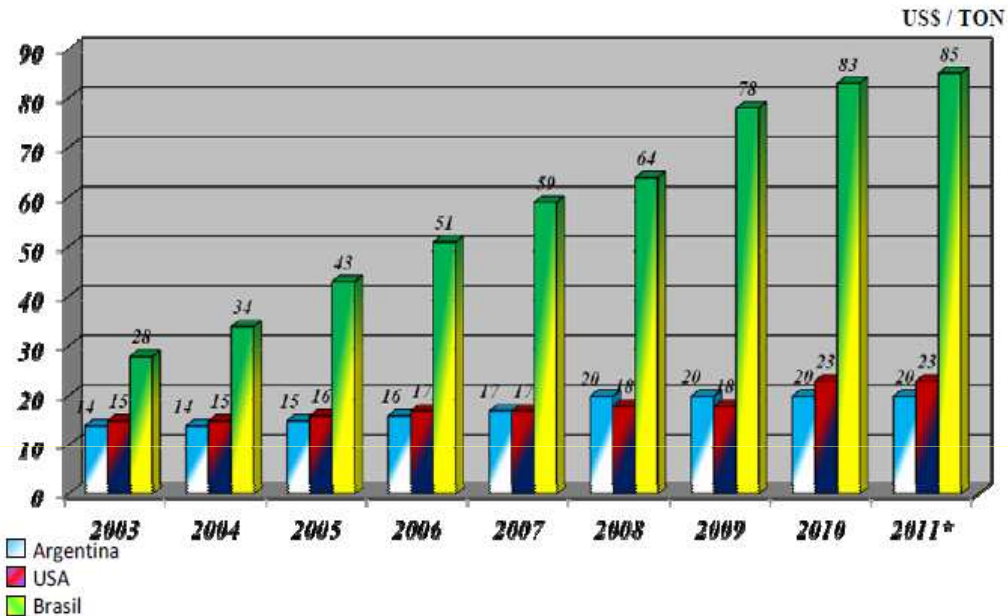
Source: ANTF / COPPE

Ano-Base 2010			
	%	%	%
<b>Waterways</b>	11	2	60
<b>Railways</b>	36	18	35
<b>Highways</b>	53	80	5
<b>Average distance to ports</b>	1.000 a 1.100 Km	250 a 300 Km	1.000 Km

**However, not every railroad or waterway in Brazil has, or will be, in the medium-term economic viability and as a promoter of development, whether in isolation (not joining the highways for short journeys) and out of large mining projects. Only agricultural, forestry, industries and general cargo not enable railways / waterways and ports with cheap costs. With the upcoming privatization / modernization the roads will be more agile / reliable and much strengthen, besides generating more direct and indirect jobs. One recent study by IPEA has also confirmed this (obs: the IPEA is the largest credibility organ of the Brazil government)**



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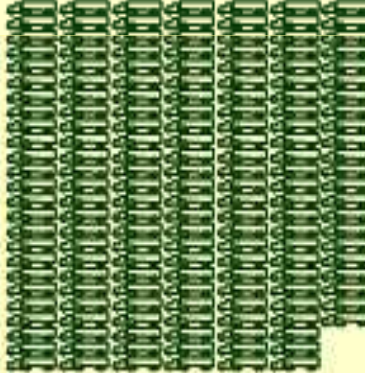


While the U.S. and Argentina, prices of road transport in U.S. \$ / ton were maintained in the long term, in Brazil, **INEXPLICABLY**, road prices have more than **TRIPLED** since 2003, mainly from farms of MT, the state's largest producer of grains and future of timber and processed meats (for being the closest to the Pacific). This greatly expands of the **BRAZIL COSTS**, very reduces our competitiveness and indicates the need for much greater competition of railway and waterway since priced at least half of the road and with seriousness, punctuality and especially higher speed. **INEXPLICABLY**, some railroads privatized today already charge prices equal to or greater than the surrounding highways



Fonte: IMEA  
2011: Estimativa Aprosoja

# BRAZIL - 2008 - CAPACITY TRANSPORT BY TYPE

Transports type	Waterways	Railways	Highways
	One double set with 04 barges and 01 pusher	equal to 2.9 hopper train with 86 wagons	equal to 172 bulk trucks bi-train
load capacity	6.000 t		
length of the load	150 m	1,7 km	3.5 km or 26 km when moving

Fonte: Caramuru, DH, TCL

# Brazil – 2008 - Comparative costs of freight



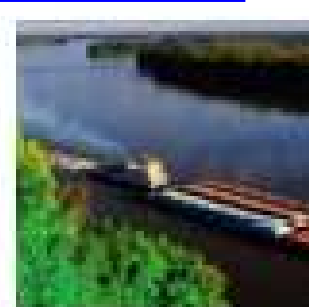
Highways

US\$ 135,00/ton



Railways

US\$ 22,00/ton



Waterways

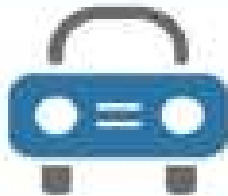
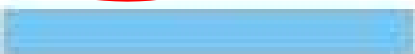
US\$ 18,00/ton

US\$ per ton per 1.000 km

## Comparative of social and environmental costs

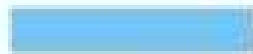
Highways

US\$ 3,20



Railways

US\$ 0,80



Waterways

US\$ 0,20



US\$

US\$ per 100 ton per 1km

a KM

Fonte: Ministério dos Transportes, revisado por ECOBR Engenharia Ambiental.

The value of rail freight in Brazil is unreal and could be reduced 50.0%. It includes investment costs in railways. Also, rails HAS NOT CARGO FOR IMMEDIATE RETURN (90.0% return empty) and they STILL move more loads of low value. The current rails transport is slow (unlike U.S. and EU) and is much losing from modern new global concept of "truck-rail-ship-rail-truck". However, this transport will improve much in the next 10 years. Highways will be used for transports below to 500 km. Roads have very high maintenance costs and polute much.



## **GLOBAL TRANSPORT CHANGES - "There Will be STRONG DISPUTES BY SALES OF CARRIERS CLOSED PACKAGES, Comparing THEIR EFFECTIVENESS, SPEED AND COSTS"**

- ✓ In future the WORLD TRANSPORTS COMPANIES & BIG CARRIERS OFFERS MORE CONTRACTS/ CLOSED SOLUTIONS PACKAGES on the "TRSRTR = Truck+Rail+Ship+Rail+Truck" new Concept;
- ✓ MORE CHEAPER SHIP COSTS WITH MANY MULTIPLES PORTS OFFSHORE (no queues, no demourrages) and transporter by Giant Ships;
- ✓ Tendency is to new and extends Rails "COAST-to-COAST," QUICKLY, AUTOMATIC and with DIRECT LOADING ON SHIPS or on "pallets treadmills"; TRUCKS ONLY BE USED UP TO 500 KM and from intermodal rail terminals;
- ✓ U.S. has 194.7 thousand kilometers of operational rails; Russia 87.2 thousand km; China 65.6 thousand; Canada 64.9 thousand; BRAZIL has 28.0 MIL, but only 10.9 MIL KM are FULLY usable; HOWEVER, BRAZIL GOVERN + INVESTORS ARE CONSTRUCTING RAPIDLY NEW 12.0 THOUSAND KM TO START IN THE NEXT 5 YEARS, including 5.8 THOUSAND KM FROM ATLANTIC COAST TO THE PACIFIC COAST (achieving PERU PORTS);
- ✓ CHINA nearly invests U.S. \$ 264.0 billion on the modals, including U.S. \$ 88.0 billion on Rails;
- ✓ IN BRAZIL, ONLY 26.0% OF TRANSPORTS ARE RAILS – it was 19.0% 10 years ago - but it NEEDS TO GET to 42.0% BECAUSE without this the GDP DOES NOT GROW 4.0% p.e. AS NECESSARY;
- ✓ BRAZIL NEEDS MORE 52.0 THOUSAND KILOMETERS OF RAILS QUICKLY, but needs US\$ 80.0 billion of new investments, being 30.0% on the railway lines more 70% in urgent construction of deviations on urban stretches. Currently THERE ARE ONLY 10.0 THOUSAND km in slow construction and average costs of \$ 1.6 million / km. Also 71.0% of current cargo is iron ore and almost no space for others cargo. In Set. 2011 among the biggest problems for non-employment: 38.0% of the clients said that the cost of rail still was expensive; 32.0% said had no espezialized wagons and 30.0% said that deadlines are not reliable, because the speed is very low and there are many stops;
- ✓ Between 2007 and 2008, tranports volumes by rail in Brazil growth 3.3% reducing 31.0 THOUSANDS TRUCKS IN ROADS.

**The China and its neighbors Asian countries, current, prioritizes a quickly construction of the new Transasiatic Railroad (coast to coast) with 14.0 thousand km from Bangkok to Istanbul that will benefit 28 countries receiving loads of 114.0 thousand km of roads**

## **Intermodal network development**

*Bringing development inland*



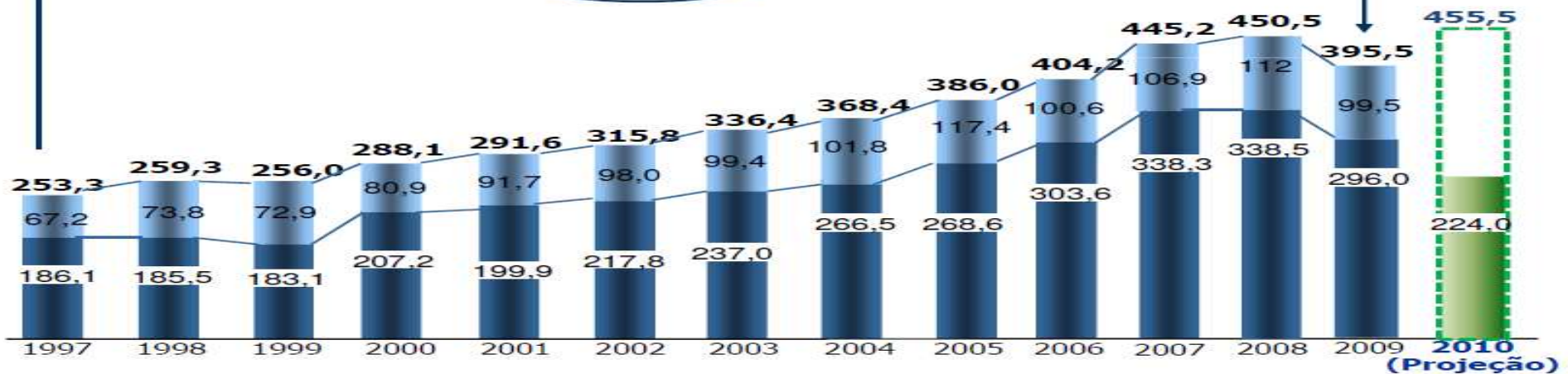
The Agreement has already identified stations of international importance

- International trading centres
- Connections between modes
- A more efficient logistics chain

Creating an economic stimulus

**The Region SERVED BY FUTURE RAIL + ROADS has 26% of world GDP; 3.9 billion people; 30% of world exports and 12 of the 20 largest cities in the world.**

**Brazil: Evolution of the volume of cargo transported by rails  
(million of useful tons.)**



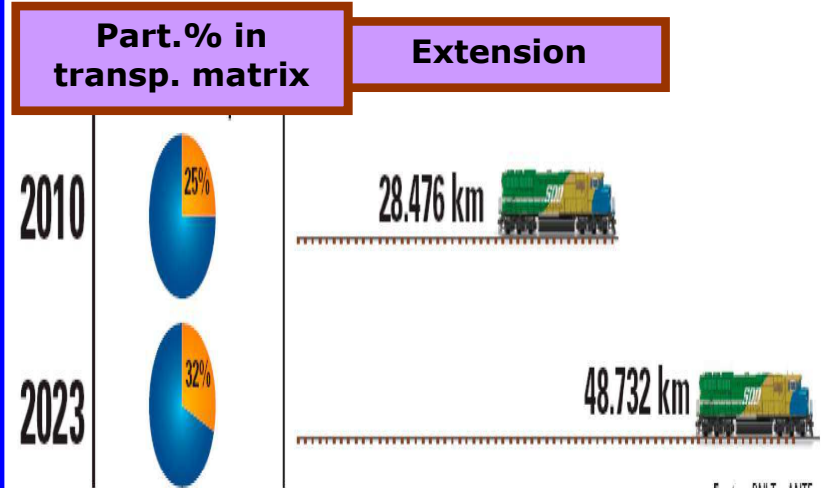
**Nota:** TU = Toneladas Úteis  
**Fonte:** ANTT e Associadas ANTF

**Brazil: The railway has greatly expanded after 2000 but is expected to double by 2030. From 2013 there will be no monopoly of track, according to new law**

**However, 65.0% of our present rails tracks is not operating, and 25.0% without recovering**

**Forecasts of rail transports in Brazil**

The Government must requires current rapid modernization of the railways, because they still use only 20.0% of the time carrying and 80.0% loading / unloading. To load a train with 220 wagons in the mines of iron, it takes up to 10 hours. On the modern railways of country, the "headway" day (time interval between trains) is still 20 minutes, up from 14 minutes than the main international competitors. Our average speed is very low (only 25 km / hour, compared to 80 km in the USA) and there are many different gauges, but the trend is the standard gauge in new stretches more quickly and cheap implementing by the third track in the old sections.



Fontes: PNLT e ANTF



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Possibly in the future the FNS North-South Railway may also further integrate with the rail network of MG, SP, RJ, ES and BA through the cargo junction (transfers) with the FCA Centro Atlantica Railway (owned by VALE) and already present in the Midwest Dry Port of Annapolis-GO (final FNS) and also present in Brasilia (DF). There were different gauges, all would be even better. Maybe in the future it would be able to deploy the so-called third track of mixed gauge ?

By direct order of the Mrs. President of the Republic the FCA should be totally revamped.

### The current FCA Centro Atlântica Railway tracks



**Some pictures of Vale's iron ore mines in State of Minas Gerais, more design with its The Vitoria-a-Minas old Rail, from that mines to the Tubarão Port on State of Espírito Santo (green line). Also it shows the giant FCA Centro-Atlantica railroad, using under concession (all the brown line), and that all need to be renewed and strengthened to serve the country well**

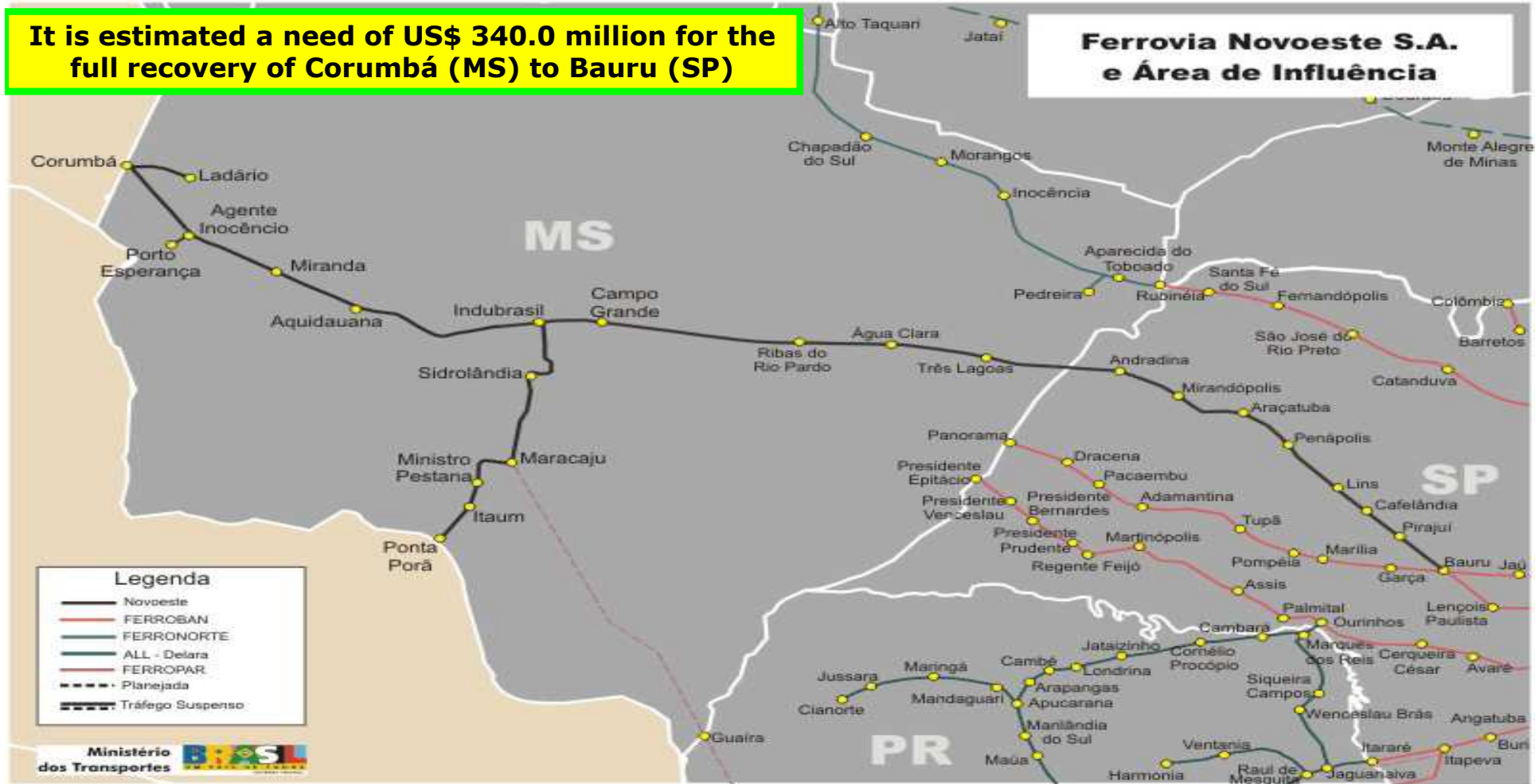


**To meet the high future demand for steel rails, recently the VALE negotiated with the Government of Minas Gerais to build a steel rail Industry itself in Governador Valadares City (MG)**

**Undoubtedly future possible reactivation and boosting of the New west/Pantanal old Railroad (former Northwest Brazil - NOB) - with mixed gauge and also for passengers - would be essential to achieve the Pacific via Chile over Bolivia, and to develop that important region and the country. With the wrong privatizations that occurred in 1996, it was scrapped hard, but is expected its full future resuscitation in this new government, fully developmentalist and more responsive to local needs, particularly to the poorest regions. In addition to enabling the SP industries - more the Midwest industries, particularly MS, GO, plus MG industries - to reach the Pacific on cheaper form, the NOB passed through heavily agricultural regions and closer to large deposits of iron ore, already in operation in Brazil (near from Corumbá-MS) and also in Bolivia. Today, part of NOB became profitable in the Ferronorte Rail will be operate from Rondonópolis City (MT) to Santos Port (SP) after 2013 and by 2016 from Cuiabá (MT) too.**

**It is estimated a need of US\$ 340.0 million for the full recovery of Corumbá (MS) to Bauru (SP)**

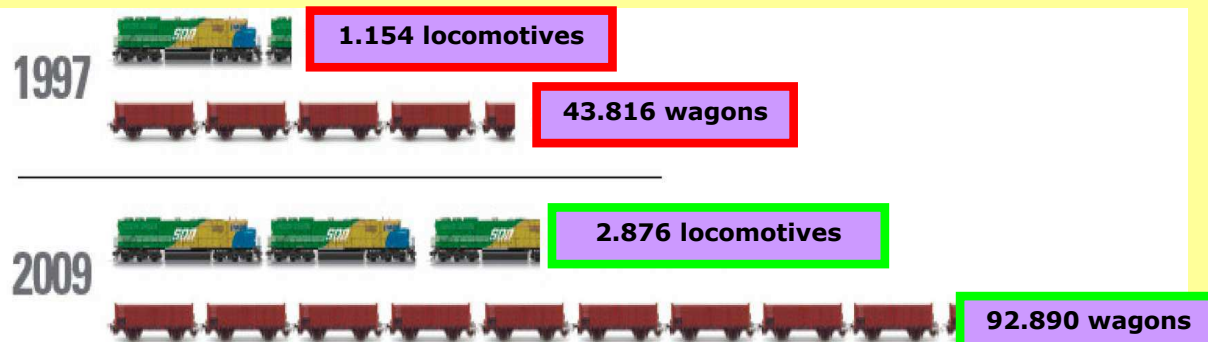
**Ferrovias Novoeste S.A. e Área de Influência**



**In 2009, our density railway was one of the worst in the world, but with the future railway will reach and will pass quickly France, Argentina and Australia. After all, the values to invest in railroads is much smaller than in HST, for example, and many companies now believe more in railways, leading to increased purchases and use of rolling stock since 2007**

Countries	Extension of the railway in 2009 (km)	Total Territorial Area (Km <sup>2</sup> )	Rail Density - 2009
Germany	41.896	348.672	120,2
Argentina	31.409	2.736.690	11,5
Australia	37.855	7.682.300	4,9
Canada	46.688	9.093.507	5,1
China	86.000	9.569.901	8,1
Denmark	2.667	42.434	62,9
USA	280.000	9.161.966	24,7
France	29.213	549.970	53,1
Hungary	8.057	89.608	89,9
Índia	64.015	2.973.193	21,5
Russia	87.157	16.377.742	5,3
<b>Brazil</b>	<b>28.857</b>	<b>8.459.417</b>	<b>3,4</b>

PUBLIC INVESTMENTS IN PROGRESS OR THE SEARCH FOR INTERNAL OR INTERNATIONAL PARTNERS OR INVESTORS	R\$ billions of 2012
HST - High Speed Train from Sao Paulo-Campinas to Rio de Janeiro	<b>36,0</b>
The Belo Monte Hydroelectric Plant (under construction)	<b>18,0</b>
The Santo Antônio Hydroelectric Plant (under finalization)	<b>6,1</b>
The Jirau Hydroelectric Plant (under finalization)	<b>9,5</b>
The FNS North-South – 1st part from Railway São Luiz-MA to Anápolis-GO ( inauguration at end 2013)	<b>9,3</b>
The Transnordestina Railway (in construction to be concluded in 2016)	<b>7,5</b>
The San Francisco River Transposition Channel (in construction to be concluded in 2015)	<b>8,3</b>
Public investment announced in railways between 2013 and 2019	<b>91,0</b>
Public investment announced in ports between 2013 and 2017	<b>54,2</b>
Public investment announced in highways between 2013 and 2018	<b>42,0</b>
Public investment announced in in regional airports between 2013 and 2015	<b>7,3</b>

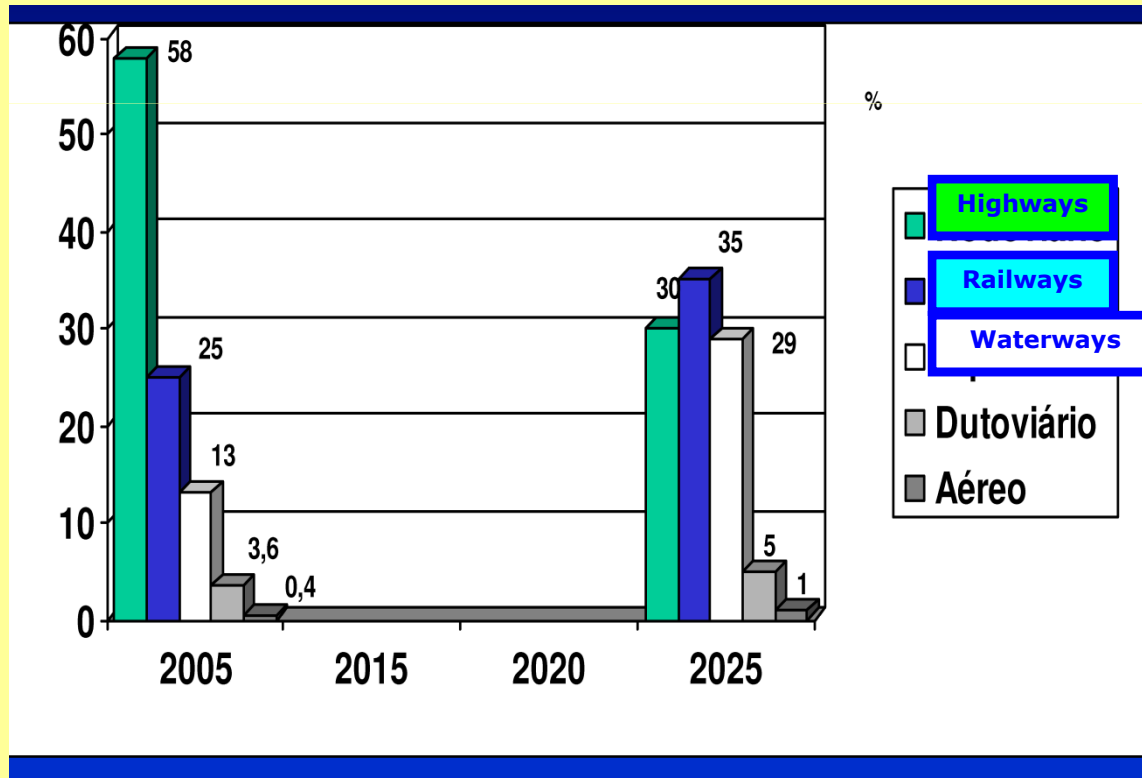




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**If kept the high current private and public supports, in 2025, 35.0% of Brazilian cargo has to be transported by railways and 9.0% by waterways.**

**Brazil: Transports Matriz at 2005 and forecasts to 2025**



Fonte: ANTF

**In addition to the much cheaper freight costs and to promote the full development in remote and even very poor regions (also very expanding domestic and local demands), the change in the transport matrix for railways and waterways can provides:**

- 1) 38.0% increase in energy efficiency;**
- 2) 41.0% reduction in fuel consumption;**
- 3) 32.0% reduction in CO2 emissions;**
- 4) 39.0% reduction in NO emission.**



# Projects already underway to integrate socioeconomic and infrastructure in South America since 2009, as IIRSA Agreement - TOTAL AXIS

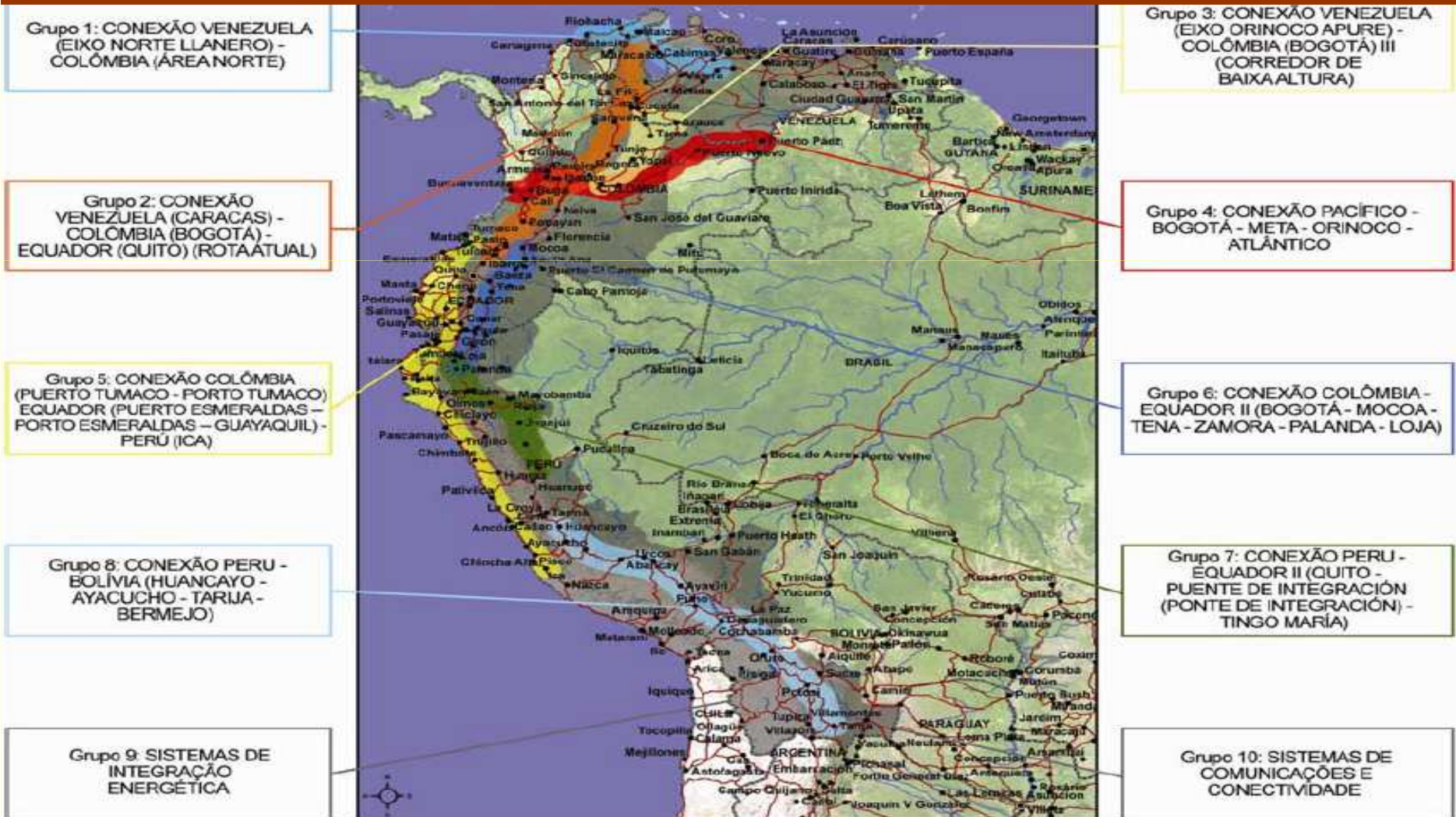
Recently, the countries of UNASUR - Union of South American Nations created an effective Program, similar to the PAC from Brazil to South America and that will be US\$ 100 billion invested in 520 works of logistics and infrastructure.





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**Projects already underway to integrate socioeconomic and infrastructure in South America since 2009, as IIRSA Agreement – THE ANDEAN AXIS**



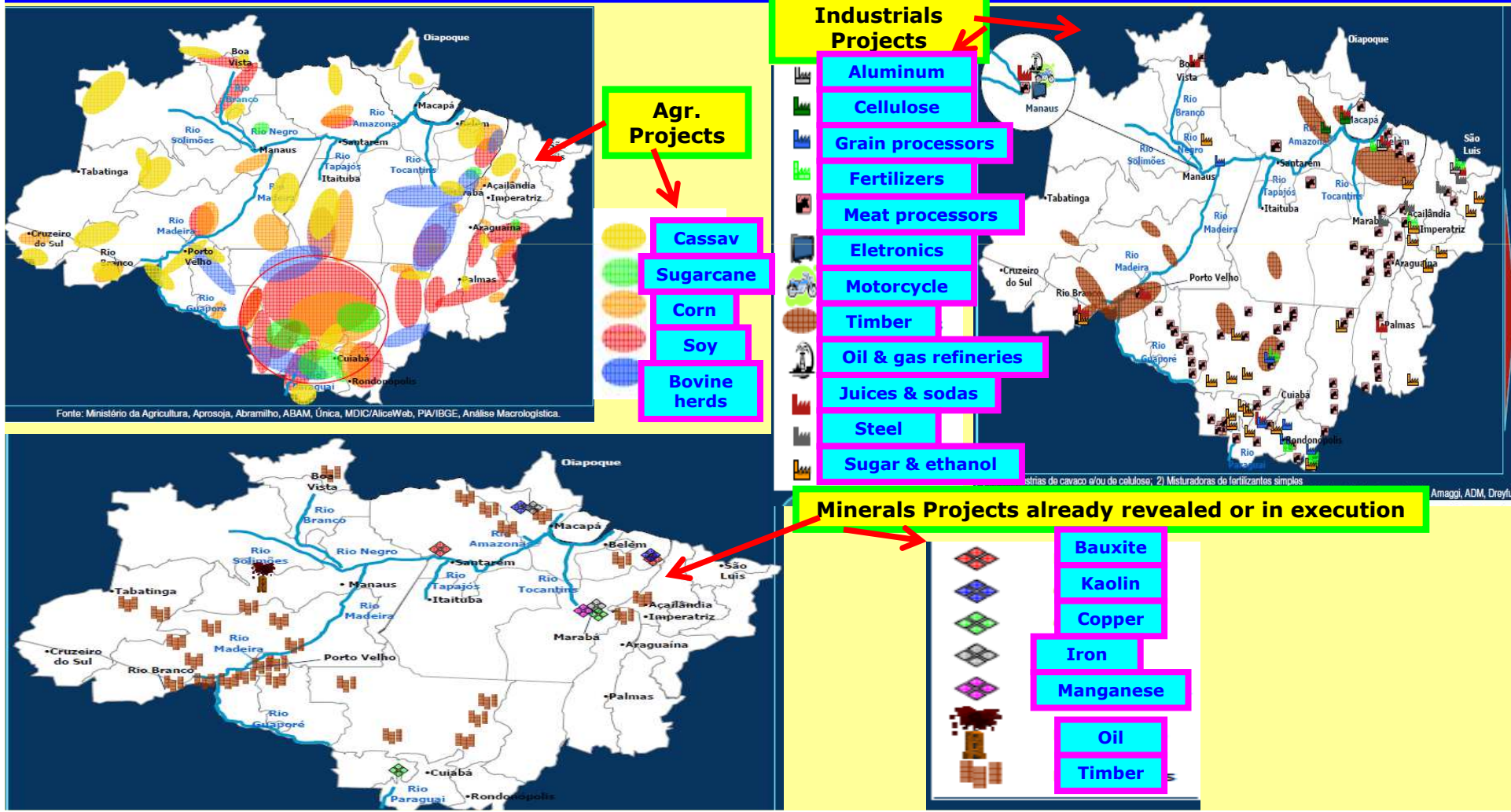


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**Projects already underway to integrate socioeconomic and infrastructure in South America since 2009, as IIRSA Agreement – THE AMAZONIC AXIS**



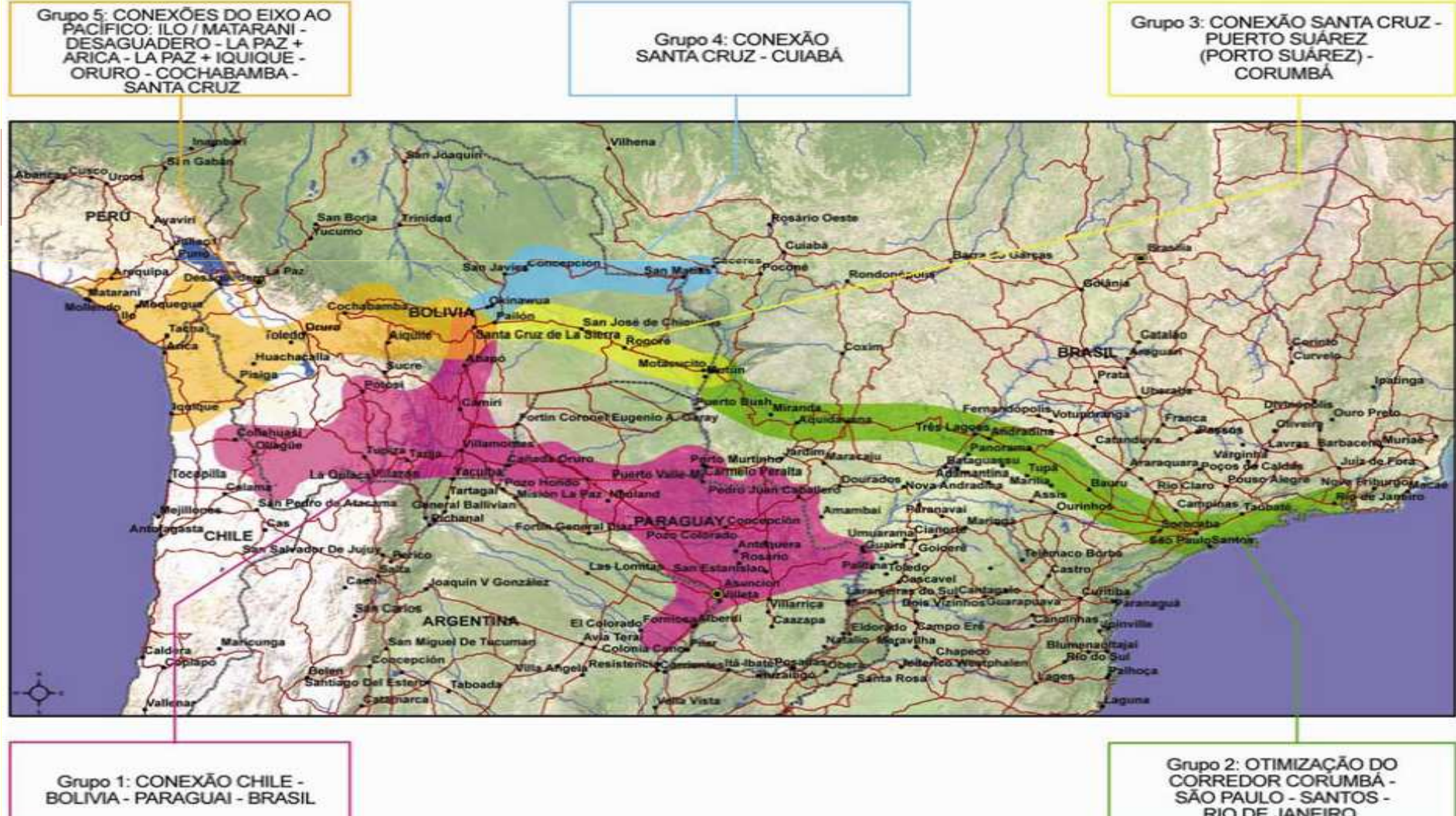
The mineral, energy, oil / gas and agriculture potentials in the Northern Region of Brazil are one of the largest in the world. There are many mining giants have revealed large projects or running (some waiting for future railways, ports and hydroelectric), all legal, proven sustainable, without degrading the forests and without harming their people. There are many other mines in research and / or known and even recorded, but not yet revealed. Small part of the forest can be used to modern legal project very profitable of timber with our new technique named "Sustainable Forest Management" and environmentally friendly (some wait railways and ports too). Also, you can explore much of the native forest with rubber trees, medicinal plants, herbs, juices and pulps of exotic fruits, handicrafts etc. The PEOPLE of BRAZILIAN AMAZON ALSO NEED THEIR SOCIO-ECONOMICALLY DEVELOPING AND WAIT FOR THEIR GUARANTEED SOCIAL INCLUSION. FOREIGN NGOS CAN NOT TAKE OVER THE AMAZON MORE.





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**Projects already underway to integrate socioeconomic and infrastructure in South America since 2009, as IIRSA Agreement – THE BIOCEANIC CENTRAL AXIS**





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Projects already underway to integrate socioeconomic and infrastructure in South America since 2009, as IIRSA Agreement – THE MERCOSUL AXIS

Grupo 4: COQUIMBO - REGIÃO CENTRO ARGENTINA - PAYSANDÚ

Grupo 5: GRUPO ENERGÉTICO

Grupo 1: BELO HORIZONTE - FRONTEIRA ARGENTINA / BRASIL - BUENOS AIRES



Grupo 3: VALPARAÍSO - BUENOS AIRES

Grupo 6: PPEHUENCHE

Grupo 2: PORTO ALEGRE - LIMITE ARGENTINA / URUGUAI - BUENOS AIRES



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**Inter-oceanic Highway Brazil - Peru (to ports of southern Peru) at the end of construction (the Brazil - Peru new Inter-oceanic giant railroad is, in small part, parallel to this road until it enter the State of Acre, but after cutting the entire ACRE, will rise up ports of northern Peru, via the towns near the end of the Andes - see map after.**





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**AREAS ALREADY ATTENDED BY THE BRAZIL 364 INTEROCEANIC HIGHWAY AND BY ITS SISTER IN PERU, MORE PERUVIAN AND BOLIVIAN RAILWAYS ALREADY OPERATING, INCLUDING FROM PUCALPA TO THE NORTHERN PERU WHERE PERUVIAN GOVERNMENT & POSSIBLE INVESTORS WILL BE BUILT A FUTURE RAILROAD TO PAITA, SECHURA AND BAYOVAR PORTS (BELONGING TO THE VALE PERU)**



Pacific Ocean

Approximate scale

**LEGEND**

- International boundaries
- State Highways
- Interoceanic Highway

Cities

Area of economic influence of the Interoceanic Highway





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**BR 364 new highway – from Brazil (State of Acre) to Peru Ports - in conclusion to dec./2014**

**The Integration West-East future Rail shall be parallel to the highway downing to Peru Ports by the "hopefull gorge" in Brazil.**



**Juruá River new bridge on Brazil (Acre)**



**The Port of Bayovar Peru (under operation)**



**The Vale S.A. major brazilian mining launches cornerstone of the PHOSPHATE PROJECT closer to the Port of Bayovar (in operation since jan/2011)**



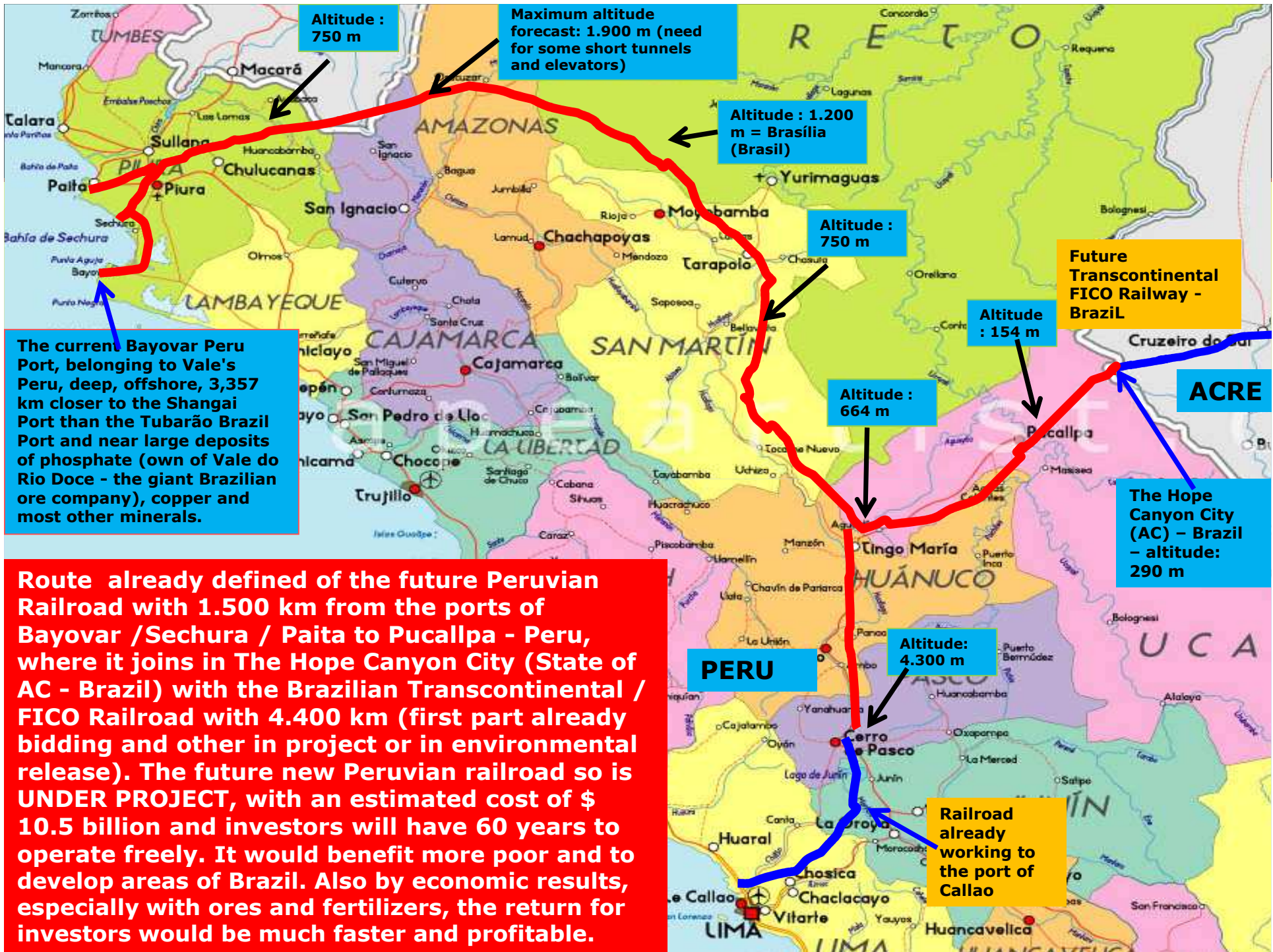


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With a total of 1.724 km, the private railroad Vicente Vuolo (former Ferronorte rail) of the ALL Logistica will be critical to the integration of the Port of Santos more Industries of São Paulo with the waterways and railways of Bolivia and Chile all to achieve the Pacific Ocean. At the moment, this rail carries many grains from Alto Araguaia City-MT and from Chapadão do Sul City-MS (on the border State of GO) to the Santos Port. Also is expected a rapid expansion to Rondonopolis City-MT, which should arrives in 2013 and after, to the Cuiabá City and Region (2016), connecting with the new FICO Railroad. Recently the ALL set up a new minning to benefit and tranport iron ores from mines on State of MS (the Corumbá-Urucum cities) and in future from State of MT (the Mirassol do Oeste City)

**Brazil - Three possibilities for quick rail access to the South Pacific Ocean by future internal rails more external rails links in the direction to Ports of Chile, Bolivia and Peru**



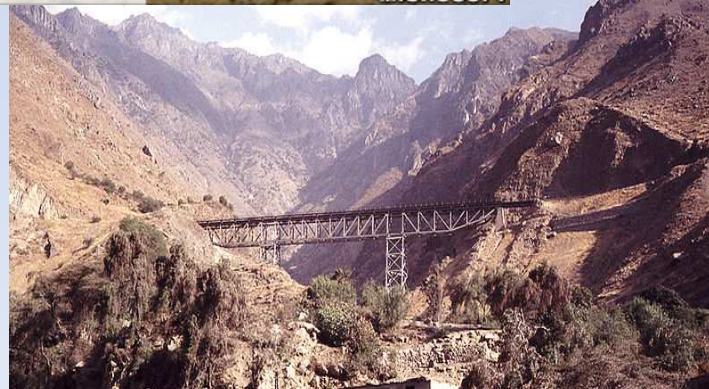
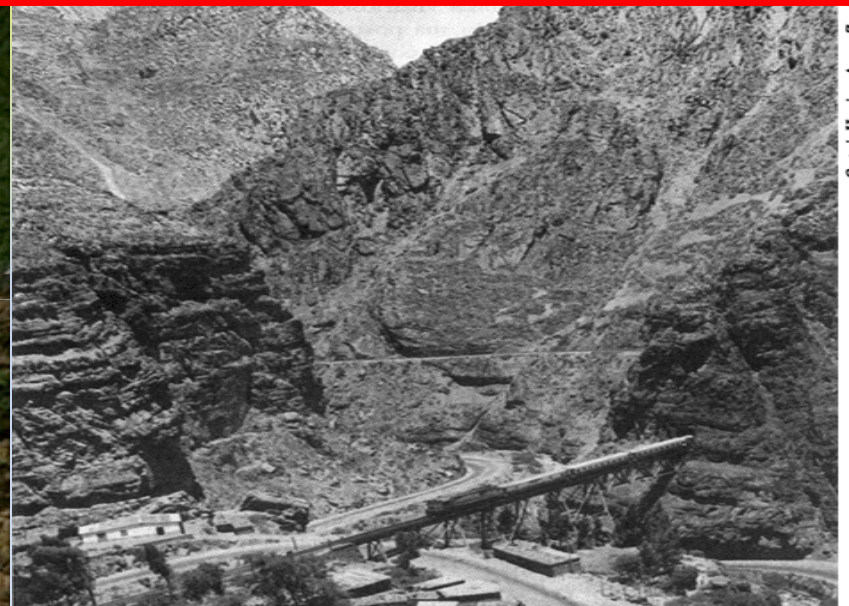
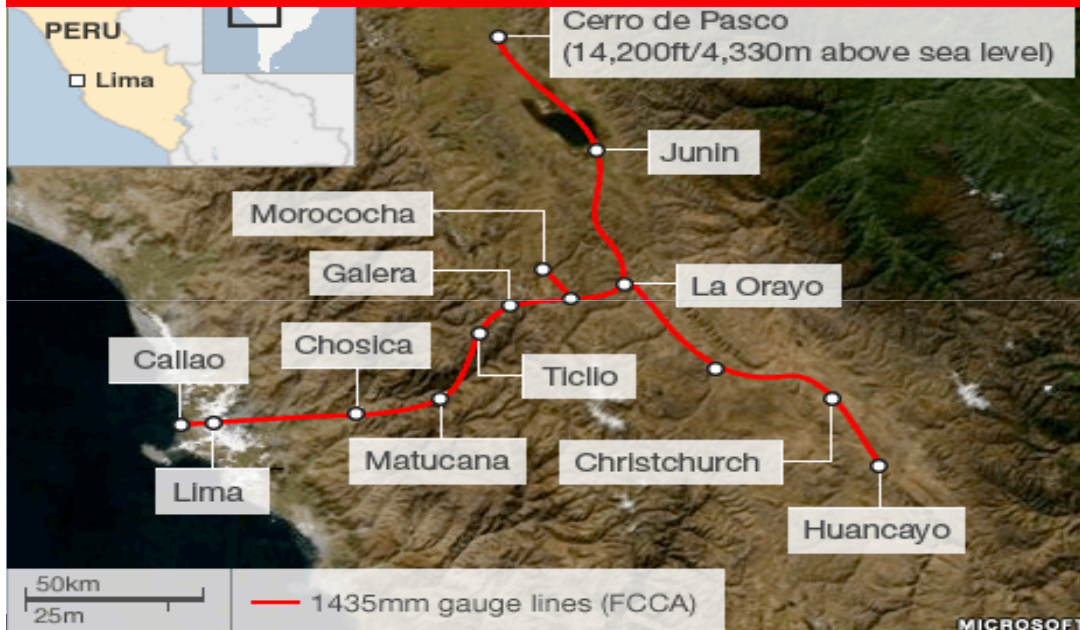


**Route already defined of the future Peruvian Railroad with 1.500 km from the ports of Bayovar / Secchura / Paita to Pucallpa - Peru, where it joins in The Hope Canyon City (State of AC - Brazil) with the Brazilian Transcontinental / FICO Railroad with 4.400 km (first part already bidding and other in project or in environmental release). The future new Peruvian railroad so is UNDER PROJECT, with an estimated cost of \$ 10.5 billion and investors will have 60 years to operate freely. It would benefit more poor and to develop areas of Brazil. Also by economic results, especially with ores and fertilizers, the return for investors would be much faster and profitable.**



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Remember that Peru has extensive experience in building and operating railroads in high altitudes, including for transportation of ores. The FCCA Central Railroad of Peru, for example, has 1.435 km of lines, being part above 4.000 meters and with 68 tunnels.



**Peru (Central) - Port of Callao, located 16,100 km from the Port of Sanghai (China) and current depth of 15 meters (to be built neighbor “the San Lorenzo Hub Port” with a depth of 45 meters)**



**Peru (South) - Port of Matarani, located 16,500 km from the Port of Yokohama (Japan) and the current depth of 13 meters**



**Brazil – “Gorge of Hope” in the border of State of Acre (Brazil) with Peru and where will the future Brazilian Transcontinental Railroad with 4.400 km**

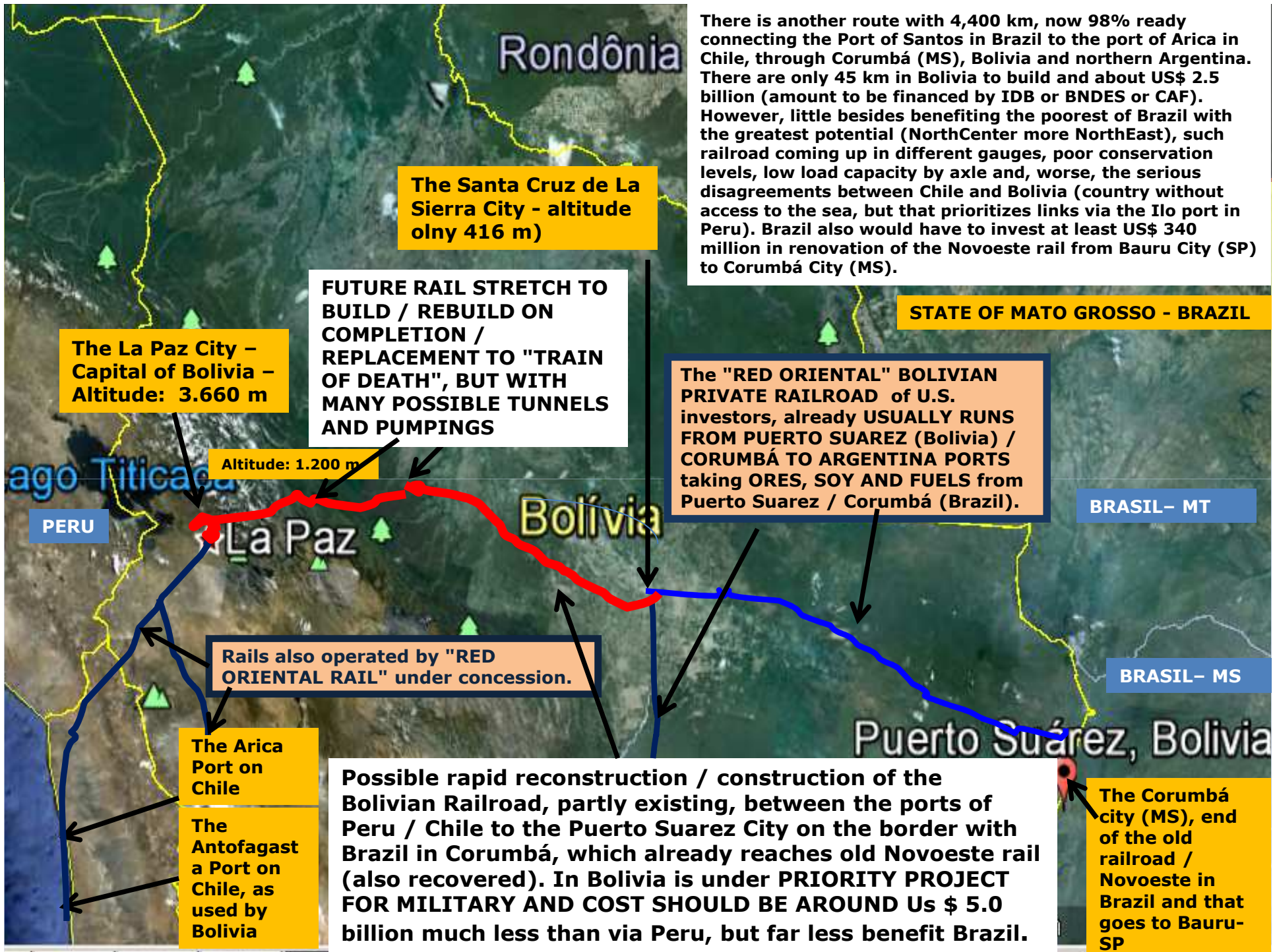




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**PERU – Future VALE offshore Port of Bayovar – Details of Project and Construction (initial depth of 15 meters). See movie about in <http://ports.com/peru/port-of-bayovar/photos/#/show-gallery?o=video-0>**





There is another route with 4,400 km, now 98% ready connecting the Port of Santos in Brazil to the port of Arica in Chile, through Corumbá (MS), Bolivia and northern Argentina. There are only 45 km in Bolivia to build and about US\$ 2.5 billion (amount to be financed by IDB or BNDES or CAF). However, little besides benefiting the poorest of Brazil with the greatest potential (NorthCenter more NorthEast), such railroad coming up in different gauges, poor conservation levels, low load capacity by axle and, worse, the serious disagreements between Chile and Bolivia (country without access to the sea, but that prioritizes links via the Ilo port in Peru). Brazil also would have to invest at least US\$ 340 million in renovation of the Novoeste rail from Bauru City (SP) to Corumbá City (MS).

**The La Paz City - Capital of Bolivia - Altitude: 3.660 m**

**FUTURE RAIL STRETCH TO BUILD / REBUILD ON COMPLETION / REPLACEMENT TO "TRAIN OF DEATH", BUT WITH MANY POSSIBLE TUNNELS AND PUMPINGS**

**STATE OF MATO GROSSO - BRAZIL**

**The "RED ORIENTAL" BOLIVIAN PRIVATE RAILROAD of U.S. investors, already USUALLY RUNS FROM PUERTO SUAREZ (Bolivia) / CORUMBÁ TO ARGENTINA PORTS taking ORES, SOY AND FUELS from Puerto Suarez / Corumbá (Brazil).**

**BRASIL - MT**

**Rails also operated by "RED ORIENTAL RAIL" under concession.**

**BRASIL - MS**

**The Arica Port on Chile**

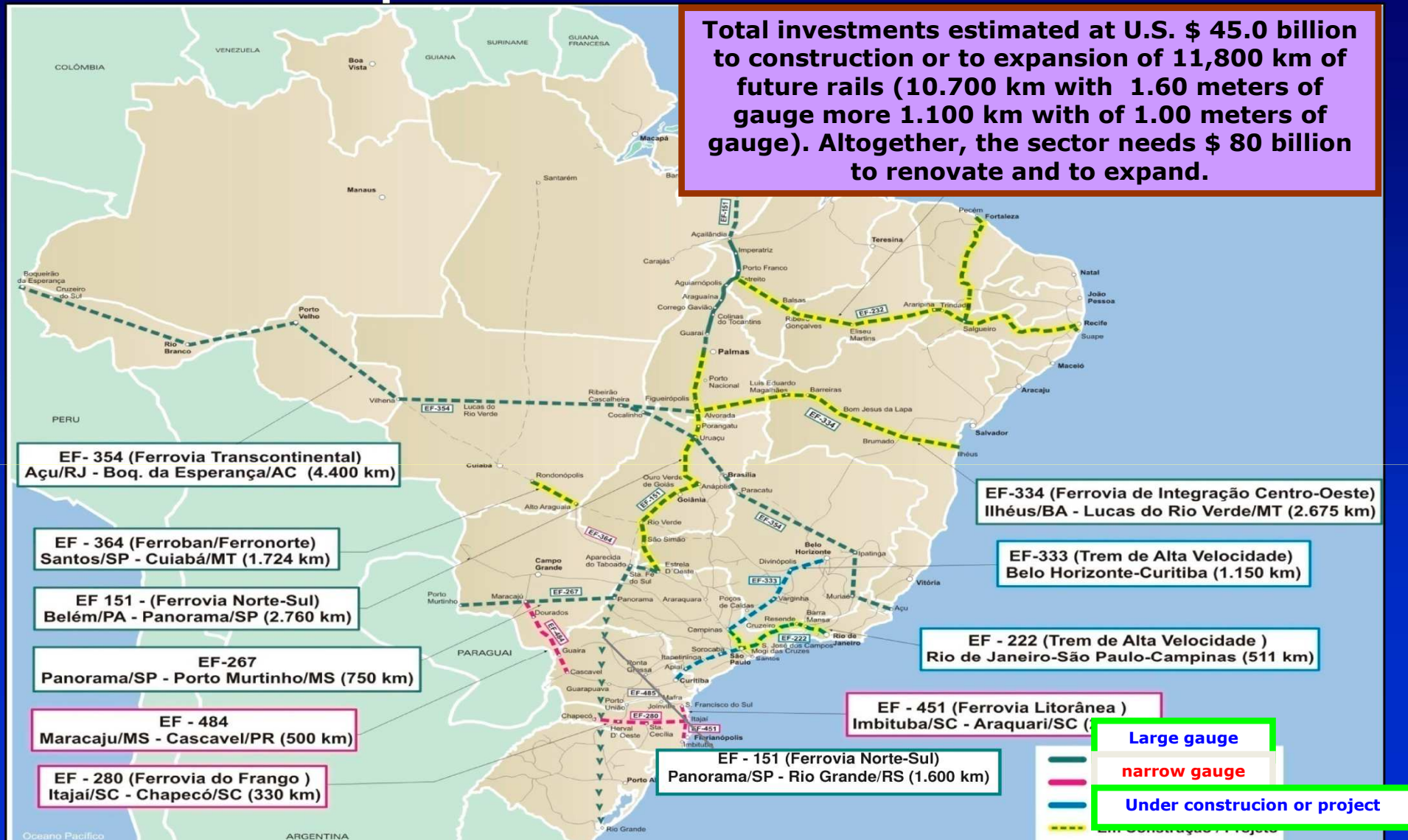
**The Antofagast a Port on Chile, as used by Bolivia**

**Possible rapid reconstruction / construction of the Bolivian Railroad, partly existing, between the ports of Peru / Chile to the Puerto Suarez City on the border with Brazil in Corumbá, which already reaches old Novoeste rail (also recovered). In Bolivia is under PRIORITY PROJECT FOR MILITARY AND COST SHOULD BE AROUND Us \$ 5.0 billion much less than via Peru, but far less benefit Brazil.**

**The Corumbá city (MS), end of the old railroad / Novoeste in Brazil and that goes to Bauru-SP**

# Brazilian Programs for Accelerated Railways Expansion - Situation in Dec. 2012

Total investments estimated at U.S. \$ 45.0 billion to construction or to expansion of 11,800 km of future rails (10.700 km with 1.60 meters of gauge more 1.100 km with of 1.00 meters of gauge). Altogether, the sector needs \$ 80 billion to renovate and to expand.



In July/2011, VALE decided to invest another \$ 1.0 billion on redevelopment and boosting on the FCA old Rail (which holds the concession). The VALE plans to prioritize the rail interconnection from the north of the Minas Gerais State and from the Triângulo Mineiro more Unai (MG) regions to the FNS future Rail already in Anapolis (GO) and to the access to the Port of Santos and to the Port of Aratu/Cotegipe closer the Salvador City (BA) and to the Ports neighbors (as Ilheus-BA and Pecem-PE). In fact, VALE seeks to guard against the great competition of future future rails networks on accelerated construction and with total access, under the new legal model adopted in the same month.

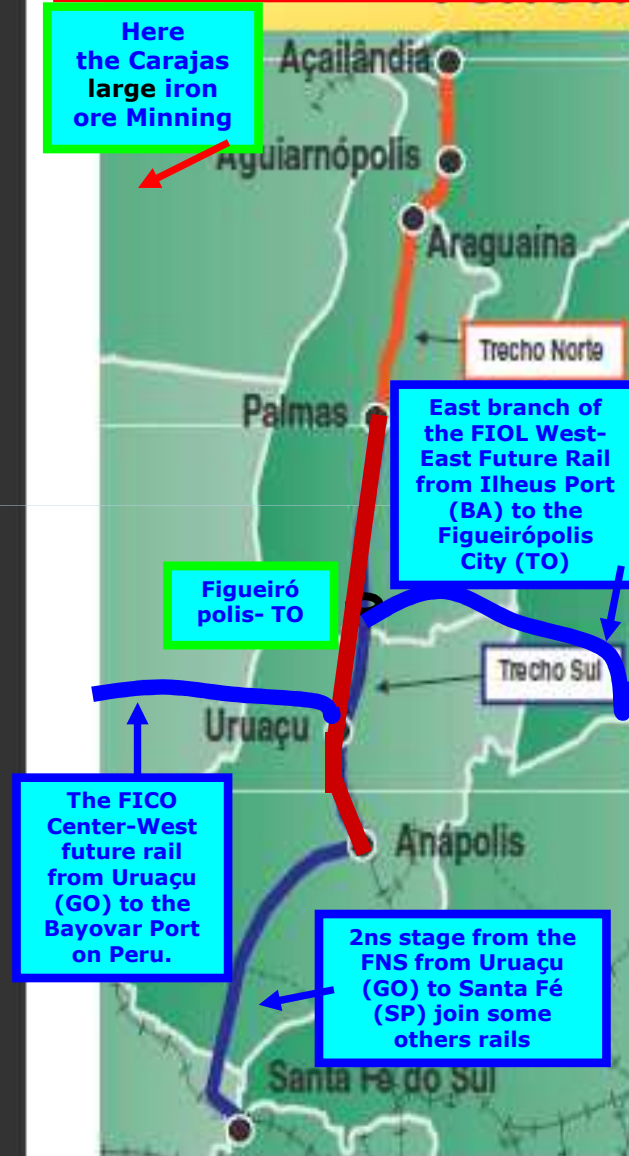


**THE BRAZIL FUTURE RAILROADS SYSTEM  
(yellow, blue and red tracks) - under accelerated construction  
and with all resources already secured by PAC – The Growth  
Acceleration Government Program**



**With the future rails, waterways and ports the conditions of flows of goods will be better, faster, reliable and CHEAPER than the old ones. Also, there will have more returns of fertilizers and imported goods from Asia and Latin America countries, by Port of Bayovar and others on Peru more on Bolivia and Chile. THE FLOW OF TRADE WILL ENLARGE WITH VERY LOW COST benefiting all Latin America economies without relying too much of the new Panama Chanel (expected to be very expensive tolls)**

**BRAZIL – The FNS North/South future Rail – Current Situation of implantation (95% done at dec. 2012)**



**With extension of 1.980 km it is already 95% done and to be inaugurated in Oct./2013. The works quite delayed in 2012 due to actions on the juridical value of indemnities paid for the lands through which the railway.**

**From Figueirópolis-TO to Uruaçu-GO where will join with the FIOI Integration West-East future Rail, a branch, coming from the Ilheus Port, State of Bahia**



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**Recent finished tracks of the FNS North-South Future Rail, closer the city of Darcinópolis (TO)**

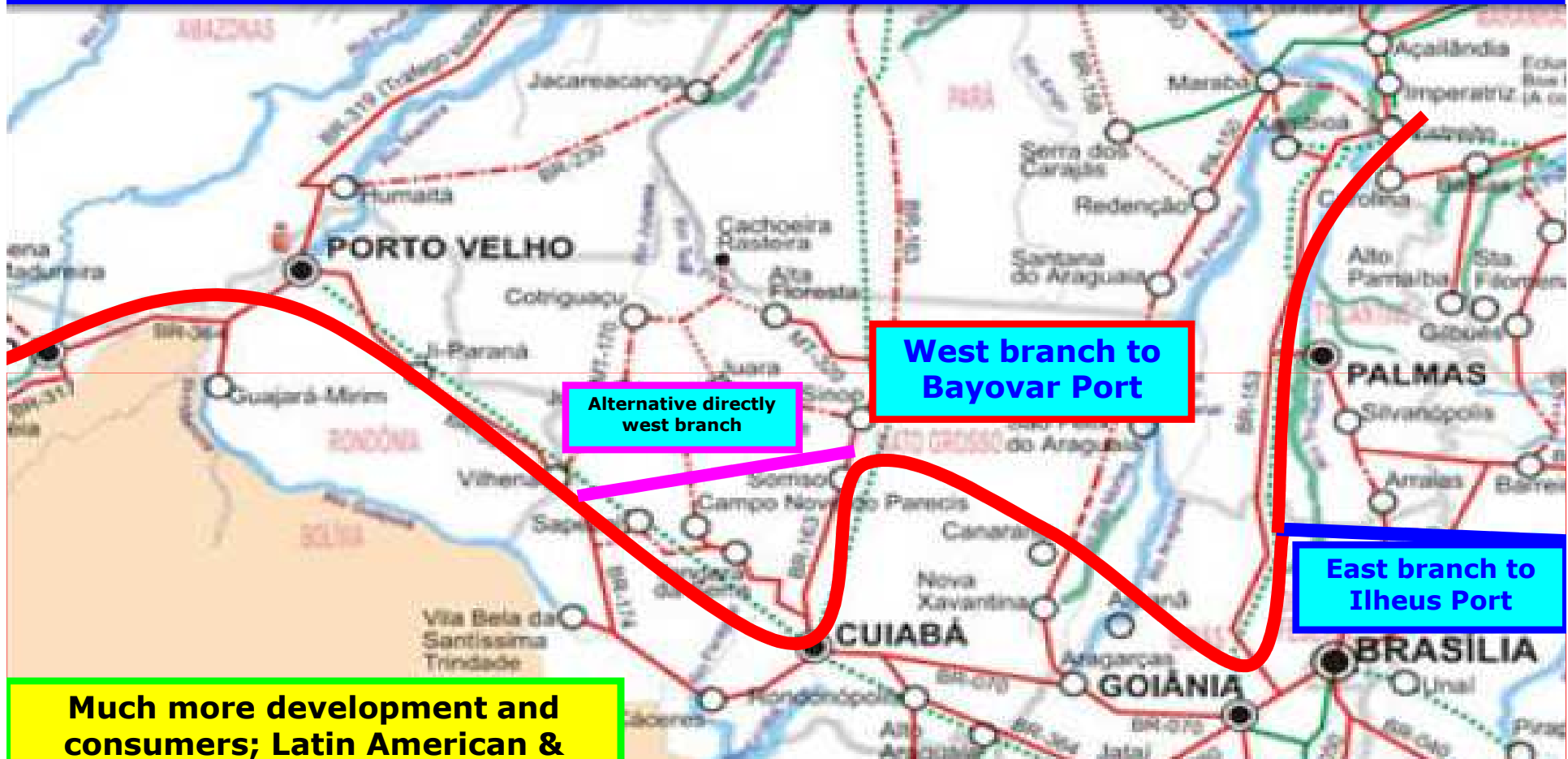


Márcio Vieira  
Secom Tocantins

**Grains terminal already in operation in Colinas City (TO)**

**The new giant North-South Railway: "the first section of São Luiz Port-MA to Anapolis-GO still must be done in Oct. 2013 and the second section (from Anapolis-GO to Estrela d'Oeste-SP, joining with other railways to reach the Port of Santos) is already under construction and its tracks already are bidding. The third section (in survey) will from São Paulo to Pelotas (RS), closer Uruguay and near from Argentine borders.**

**THE Future BRAZIL BIOCEANIC RAIL or TRANSOCEANIC RAIL - From the future big offshore Atlantic Port of Ilheus in Brazil to the Pacific Port of Bayovar in Peru - WEST BRANCH FORECAST LOCATIONS (the FICO rail) (survey in order to obtain the necessary environmental locations permissions)**

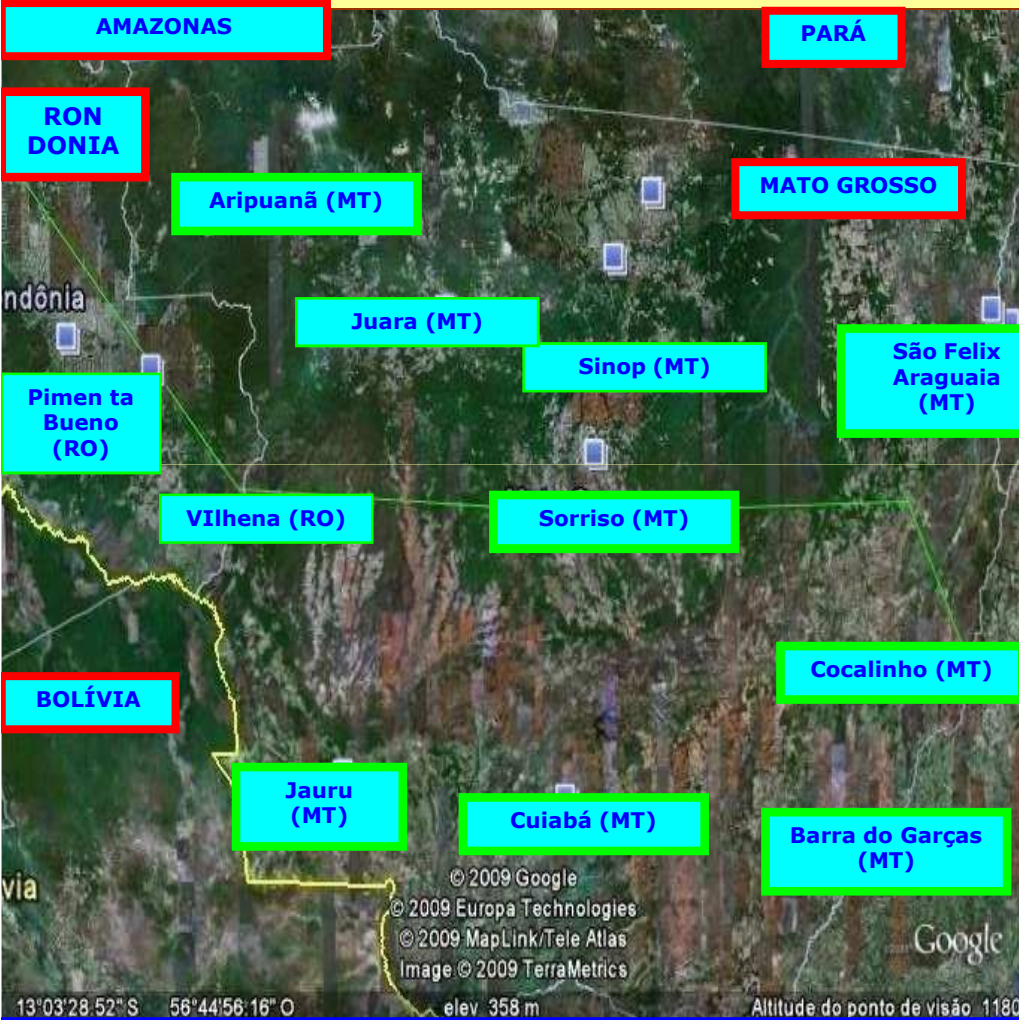


**Much more development and consumers; Latin American & Pacific fast access; fertilizers, grains, processed foods (bovine, porks & poultry meats, dairy etc.), timber products, biodiesel, ethanol from sugar cane etc..**

**In July/2011, began studies for the expropriation of land for the passage of the second section between Cocalinho-MT and Agua Boa-MT and also beginning studies to built a large bridge with 2.2 km in the Araguaia River between GO and MT states**

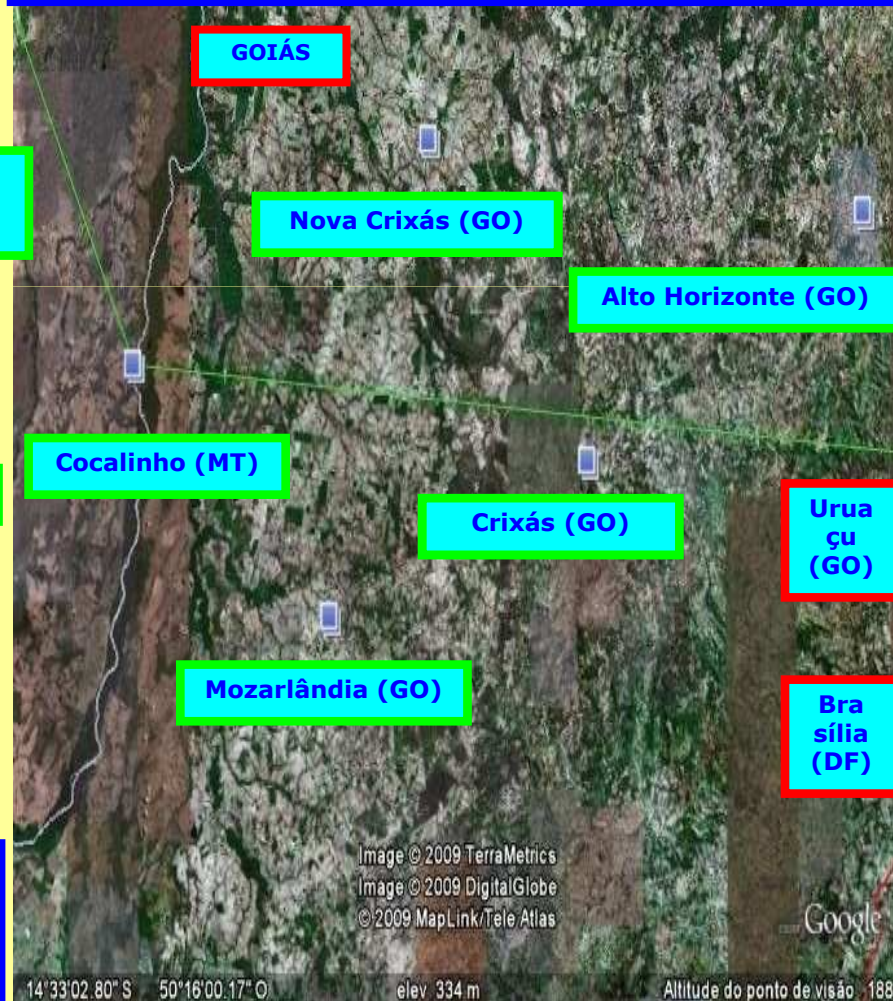


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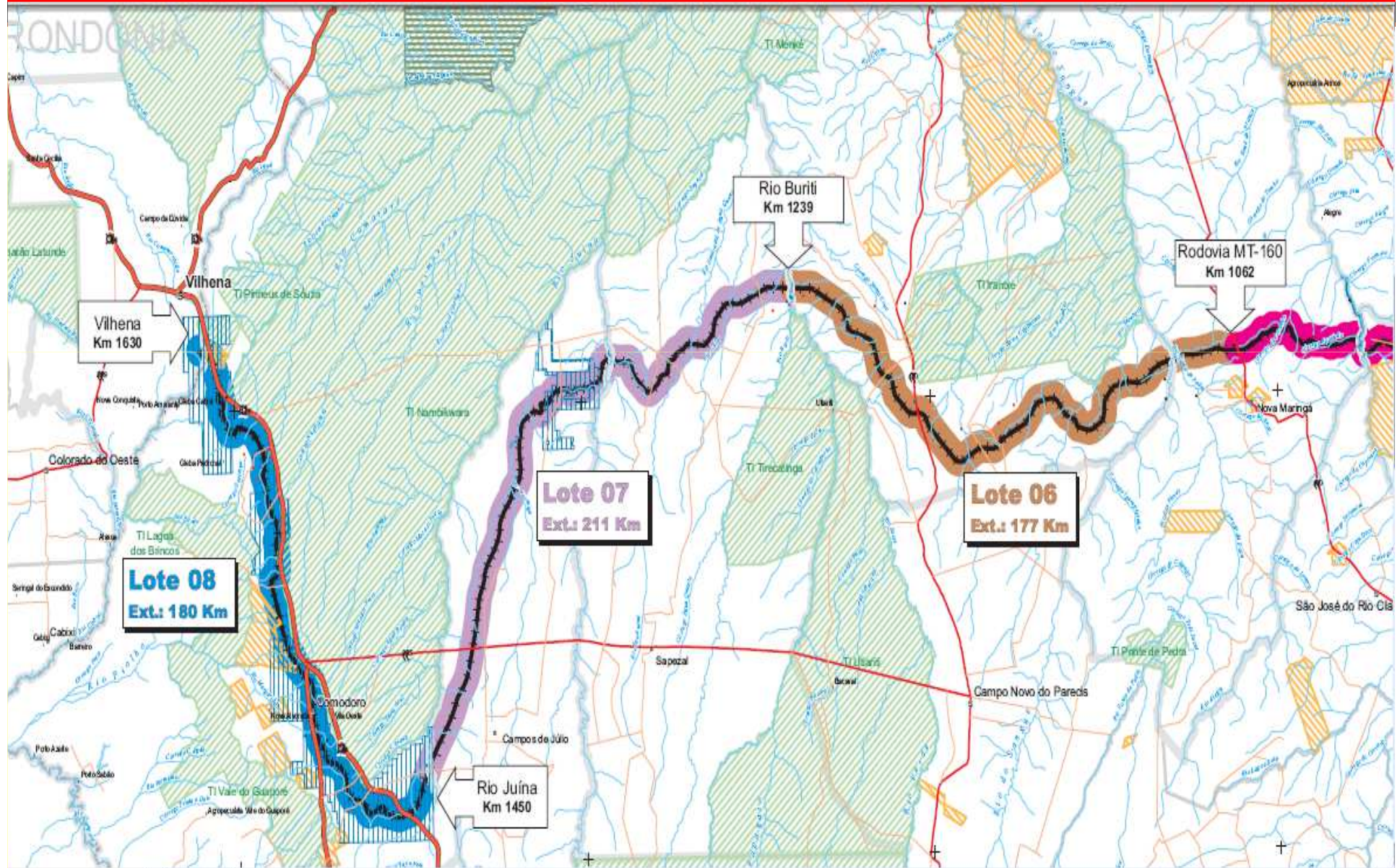
**The future FICO Rail - Western Section in MT + RO according The VALEC Government (Green line)**

**The future FICO Rail - Eastern Section in GO, according The VALEC Government (Green line)**

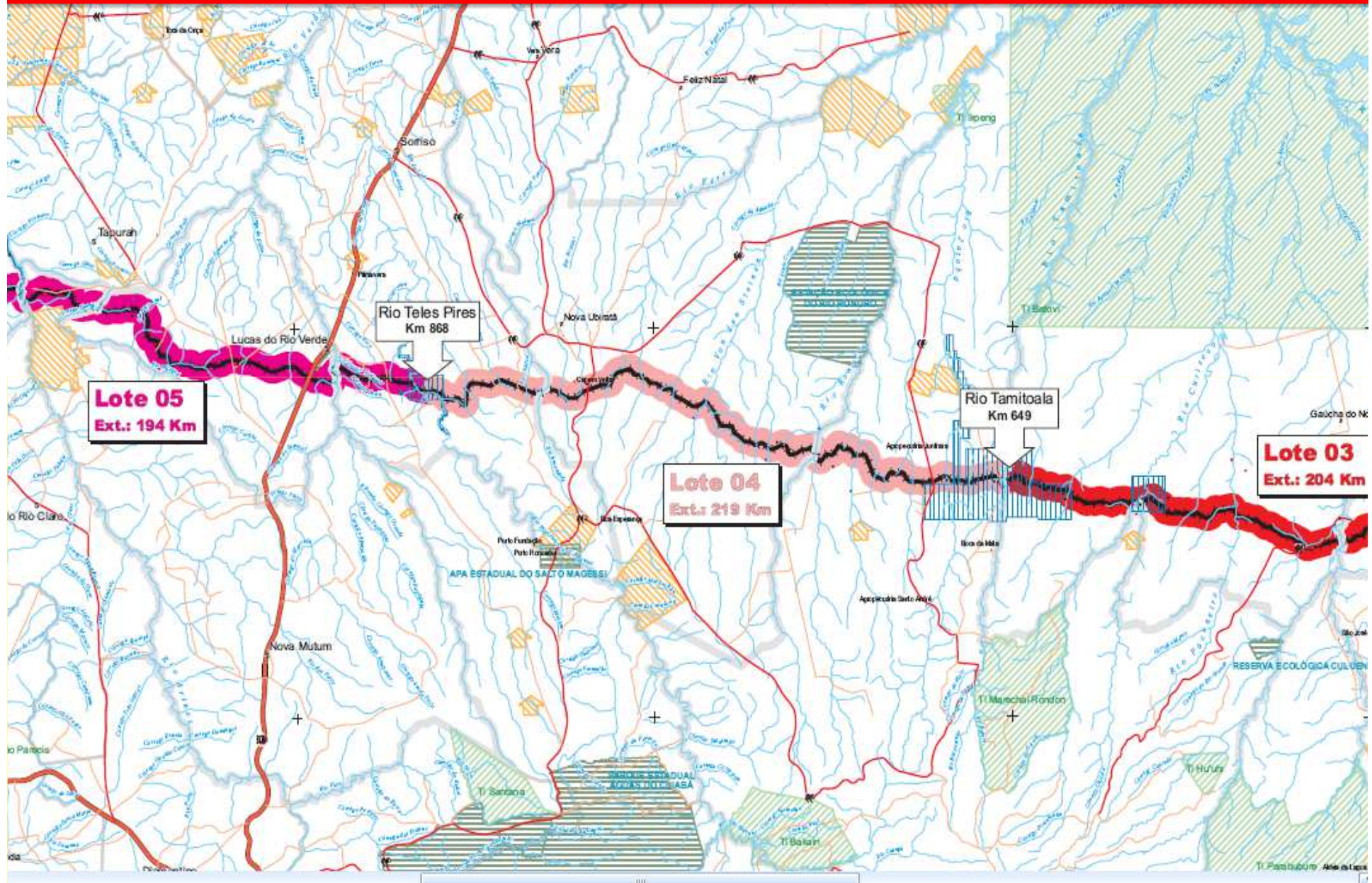


**The future FICO Rail - Eastern Section in GO according The VALEC Government (Green line)**

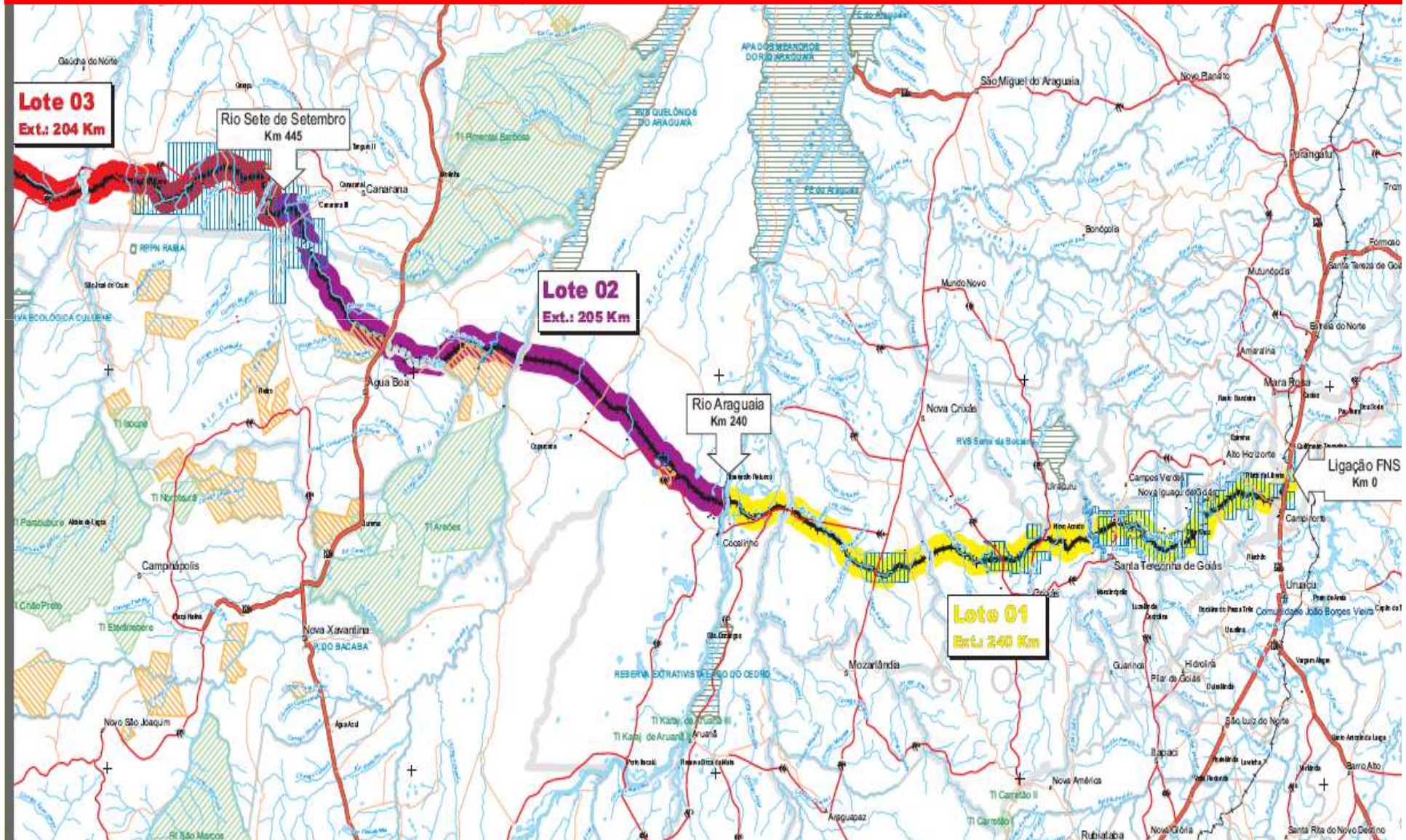
**THE future FICO – CENTER-WEST INTEGRATION RAIL - Route in Center of The States of Mato Grosso and Rondonia. After going through the entire state of Rondonia and Acre it will reach the pacific port of Bayovar (own VALE Port) and others Ports in Peru**



**THE future FICO – CENTER-WEST INTEGRATION RAIL - Route in Center of The States of Mato Grosso and Goiás. “This region is already one of the largest producers of soybeans, corn and beef of the World”**



**THE future FICO – CENTER-WEST INTEGRATION RAIL - Route in Center of The States of Mato Grosso and Rondonia. In the end it merges with the FNS North-South Rail from Itaquai Port to Santos Port, closer Brasilia and already 95% done. From there, it join with the future FIOL rail and continues to the Port of Ilheus-BA in Atlantic Ocean.**





**THE future BRAZIL BIOCEANIC RAIL or TRANSOCEANIC RAIL – In part from the future big offshore Atlantic Port of Ilheus in Brazil to the Pacific Port of Bayovar and Others Ports in Peru - EAST BRANCH LOCATIONS (the FIOLE Rail) (work began in December 2010 and more advanced basis already is in mid-way in the Correntina City - BA)**



**FERROVIA OESTE-LESTE**

**Obras em setembro**

O governo promete licitar a obra até julho e começá-la em setembro deste ano. A expectativa de conclusão do trecho Ilhéus-Castilê, com aproximadamente 400 km, é no segundo semestre de 2011.

Extensão  
**1.650 km**

Investimento  
**R\$ 4 bilhões**

**Food, grains, irrigated fruits, biodiesel, ethanol from irrigated sugar cane, iron ore, nickel, manganese, uranium, precious stones etc.**

**THE future FIOL WEST-EAST INTEGRATION RAIL - The most strategic minerals rail in broad gauge (brown line) of the country because is closer both of large unexplored mines (in northeast of GO, southeast of TO, north and northeast of MG and southwest/ northeast of BA) and yet of the future big offshore Port of Ilheus, Bahia, and next to old but operational railroad on narrow gauge.**

searching for US\$ 3.0 billions of investments

Extension 1.400 km

the railroad passes for 32 counties, being 22 minerals

The future Ilheus/Aritagua off shore Port

The Atlantic Ocean

O PROJETO FOI DIVIDIDO EM TRÊS ETAPAS:  
1ª 530 km, entre Ilhéus e Caetité  
2ª 413 km, entre Caetité e São Desidério  
3ª 547 km, São Desidério e Figueirópolis



The future FIOLE rail pass through many regions with many deposits of iron ore, nickel, manganese, gold, rare earths, graphite, marble, quartz, granite, etc., all with significant proven volumes only waiting for the railroad to explore. Also passes through areas with high production of grain, cotton, meat and milk etc. and still with many GOOD LAND TO OPEN AND RECOVER, LEGALLY, to produce for export or supply for the NORTHEASTERN NEIGHBOR MARKET WITH GROWING DEMAND AND HIGH POTENTIAL OF CONSUMPTION



**Map of the future FIOAL rail more the future Ilheus-Aritaguá offshore Port (BA) to be built to 3.5 km from the beach and with up to 24 meters deep for giants ships (see more data at end)**



**Future FIOAL Railroad from Port of Ilheus-Aritaguá (BA) to Figueirópolis City (TO), where it joins with the FNS North-South Rail (photos of the early works from Ilheus City to Itabuna City in 2011). This future railroad already had its tracks in bidding. The works are very fast and expected to be concluded in 2016.**



## The FIOL RAIL - Works near the Jequié City (BA) and toward the Brumado City (BA)



The works of the FIOL are fast-paced and most advanced construction site already reached the Correntina city (BA) in December/2012, about half the distance of 1.019 km planned from the Ilheus City (BA) to the Figueirópolis city (TO). The works not only walk faster, due to delays in environmental clearances by the own government and the lengthy negotiations to pay the necessary compensation to owners of land through which the railroad. Also, there are many followed embargoes by the Court of Accounts, without doubt commendable and beneficial. However, for some sociologists and serious political such actions and questions should be to precede works or should be via corrective / very punitive actions, including prisons, but after its end and never in the implementation stage. No doubts its hurt a lot those poorest regions and the Country, looking more actions by unknowns of local realities more probably insensibility with their poorest people.

Construction-base on Brumado (BA) where it meets the FCA rail from Montes Claros City (MG) to Aracaju City (SE) and already have large mines of bauxite, magnesium, uranium etc. of miners such as Votorantim, Magnesite, Cabral, INB, AVG, and near future giant's iron mine BAMIN.

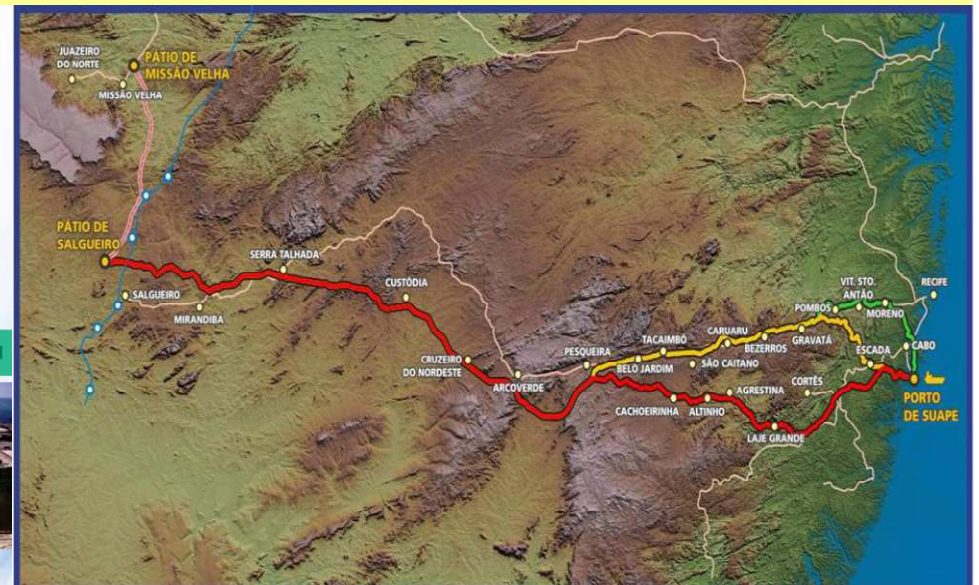
Construction-base of extension to Guanambi City (BA) and to Salinas in northeast of MG state (large iron mines)

Vale at The Bom Jesus da Lapa city closer to the São Francisco River and where FIOL will



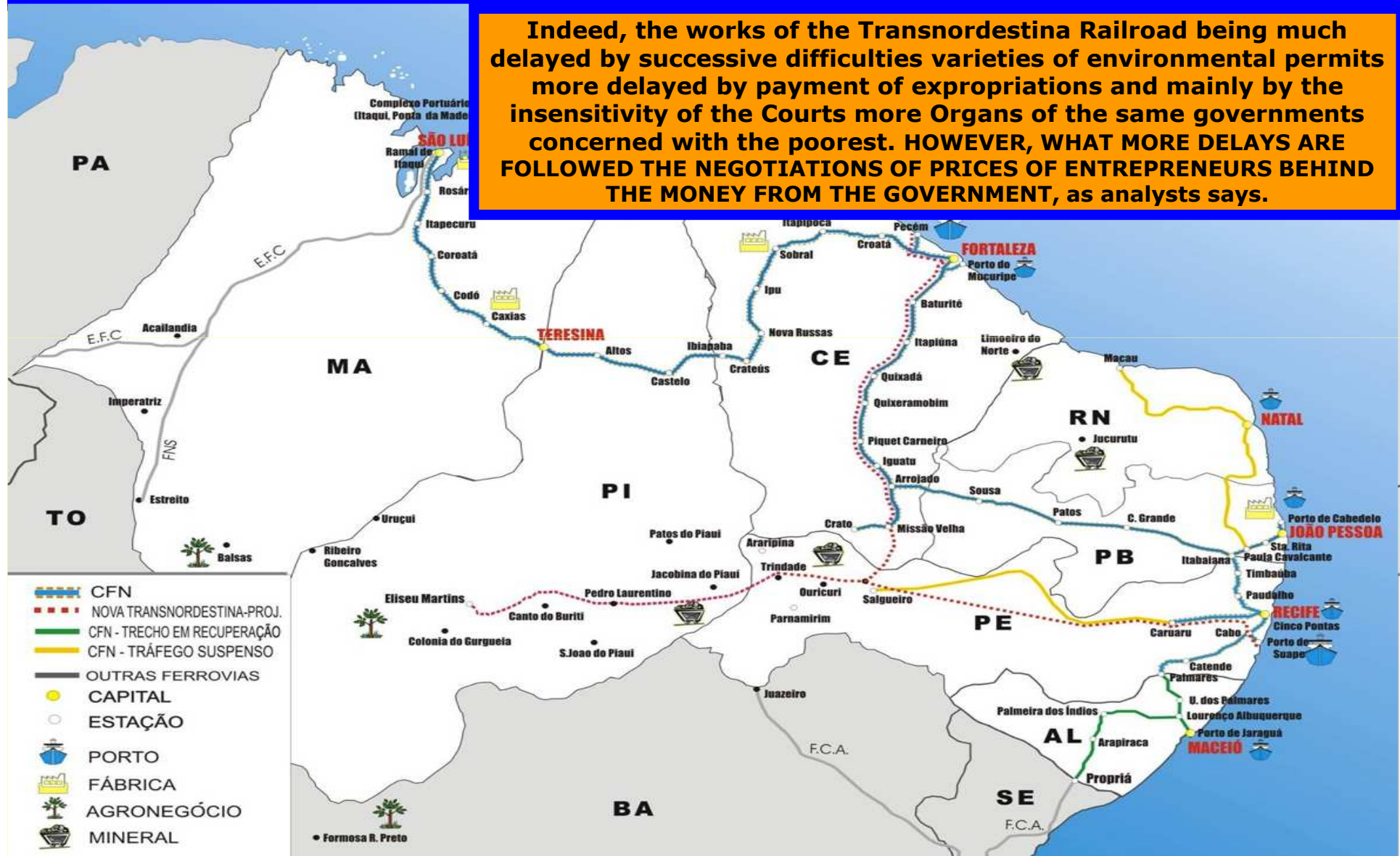


**Also the future Transnordestina rail more the CFN old rail are so fundamental to the country that its implementation is an URGENT request of the President Rousseff (2016). They will link the Ports larges and deep of Northeast (Suape-PE, Pecem-CE and São Luis-MA) with the interior - still very poor and needy, but with many minerals and high potential. Also they unite with the North-South future rail (opening until Oct. 2013) more the FCA Centro-Atlântica old Rail**



The future private Transnordestina Railroad (red traces) and its continuity over joints with the CFN – NorthEast old Rail (blue lines), in partial operation, pass through many regions with deposits of iron ore, gypsum, nickel, manganese, gold, rare earth, graphite, marble, quartz, granite, etc., all with significant proven volumes, very close to large, deep harbor and just waiting for the railroad to be explored.

Indeed, the works of the Transnordestina Railroad being much delayed by successive difficulties varieties of environmental permits more delayed by payment of expropriations and mainly by the insensitivity of the Courts more Organs of the same governments concerned with the poorest. HOWEVER, WHAT MORE DELAYS ARE FOLLOWED THE NEGOTIATIONS OF PRICES OF ENTREPRENEURS BEHIND THE MONEY FROM THE GOVERNMENT, as analysts says.



# The Brazil Waterways

Current Brazil has 28 thousand kilometers of navigable waterways and it has more 15 thousand kilometers with a high potential for navigation



## Potential Waterways on: (for investors too)

- 1) Teles Pires-Tapajos Rivers;
- 2) Xingu River;
- 3) Trombeta River;
- 4) Parnaíba River;
- 5) Guamá-Capim Rivers.

## Current Waterways on:

- 1) Madeira-Amazon Rivers;
- 2) Paraguai-Paraná Rivers;
- 3)Paraná-Tieté Rivers;
- 4) San Francisco River;
- 5) Tocantins-Araguaia Rivers.



The Tocantins & The Araguaia Waterways has some hydroelectric (UHE) under initial construction, all with sluices. (for investors too)

## TOCANTINS

**UHE Tucuruí**

**Desnível: 72 m**

**Construção das Eclusas**

**Trecho Marabá-Estrelto**

**Intervenção Necessária:**

**Derrocamentos em corredeiras**

**UHE Estrelto**

**Desnível: 38 m**

**Intervenção Necessária:**

**Construção de Eclusa**

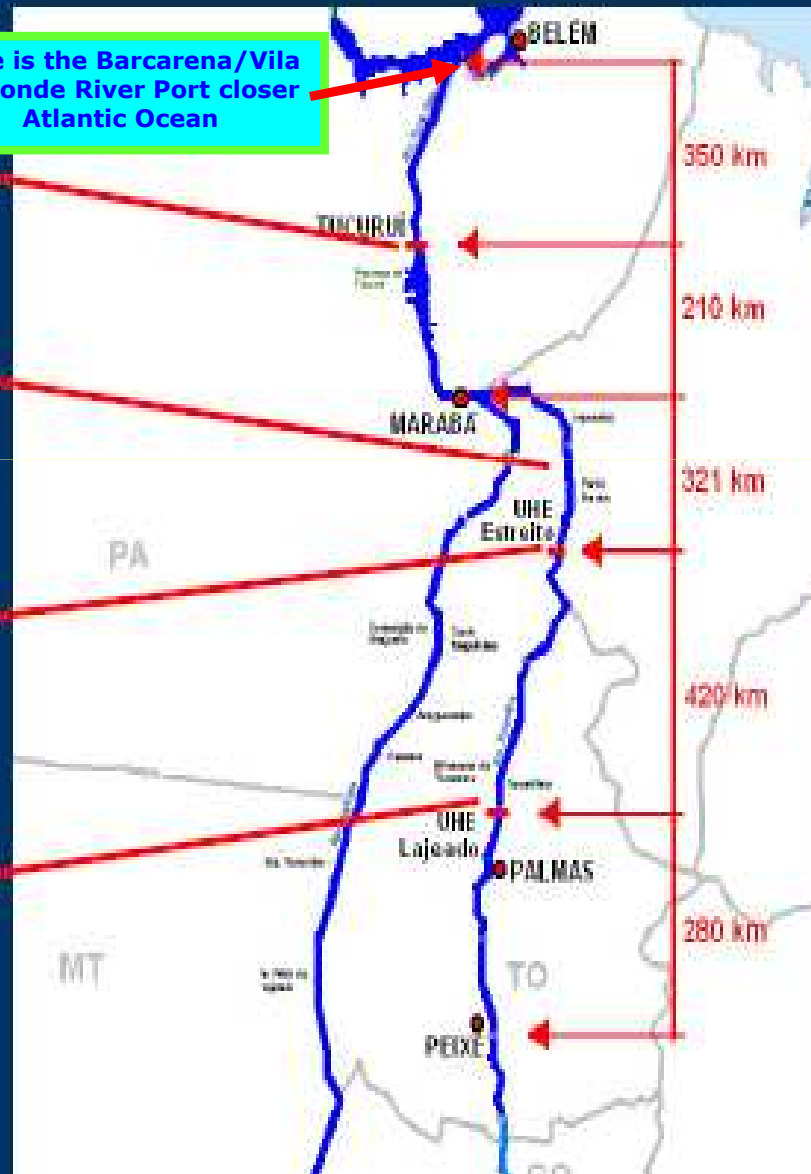
**UHE Lajeado**

**Desnível: 38 m**

**Término das Obras da Eclusa**

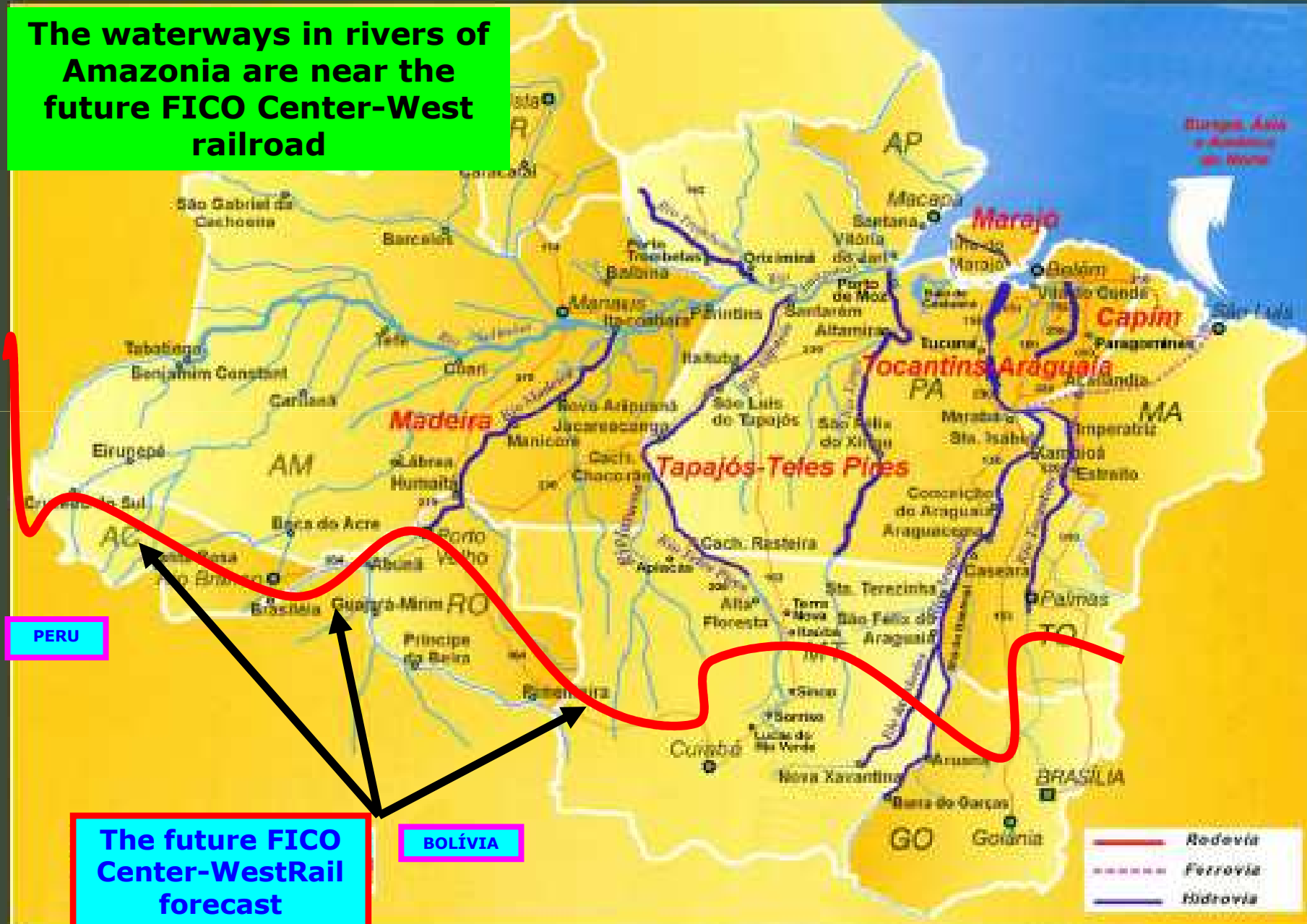
**With the conclusion will be more than 1.580 km navigable**

Here is the Barcarena/Vila do Conde River Port closer Atlantic Ocean



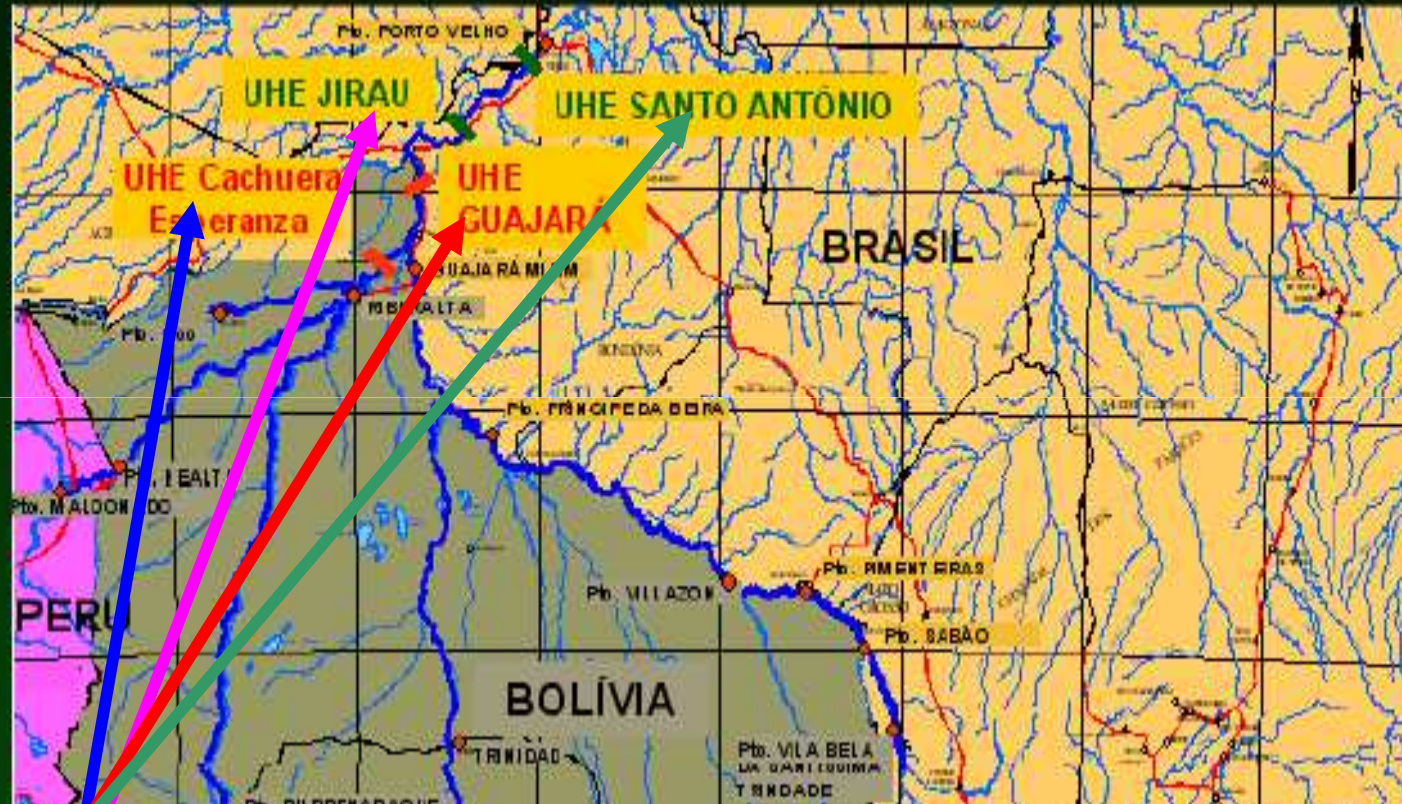
# Brazil - Amazon Region - Major waterways

The waterways in rivers of Amazonia are near the future FICO Center-West railroad





## The Madeira River Waterway - New larges hydroeletrics (UHE) for expansion



With more Hydro energy (04 big plants under construction in the Madeira river more neighboring the Belo Monte, Teles Pires and Serra Quebrada) and lots of natural gas from Bolivia, Juruá (AM) and Urucu (AM) and, now, also gas of basins of the Solimões, the Amazonas, the Parnaíba more the San Francisco Rivers will be guaranteed cheap energies for industrial, social and environmentally sustainable developments at low costs (lower than in the South / Southeast)

**In Brazil and Bolivia are in construction 4 giants hydroelectric Plants (UHE) that could enlarge 4 times the waterway transports potential included from Bolivia**

**UHE JIRAU**

**The Current Madeira-Amazon rivers waterway**

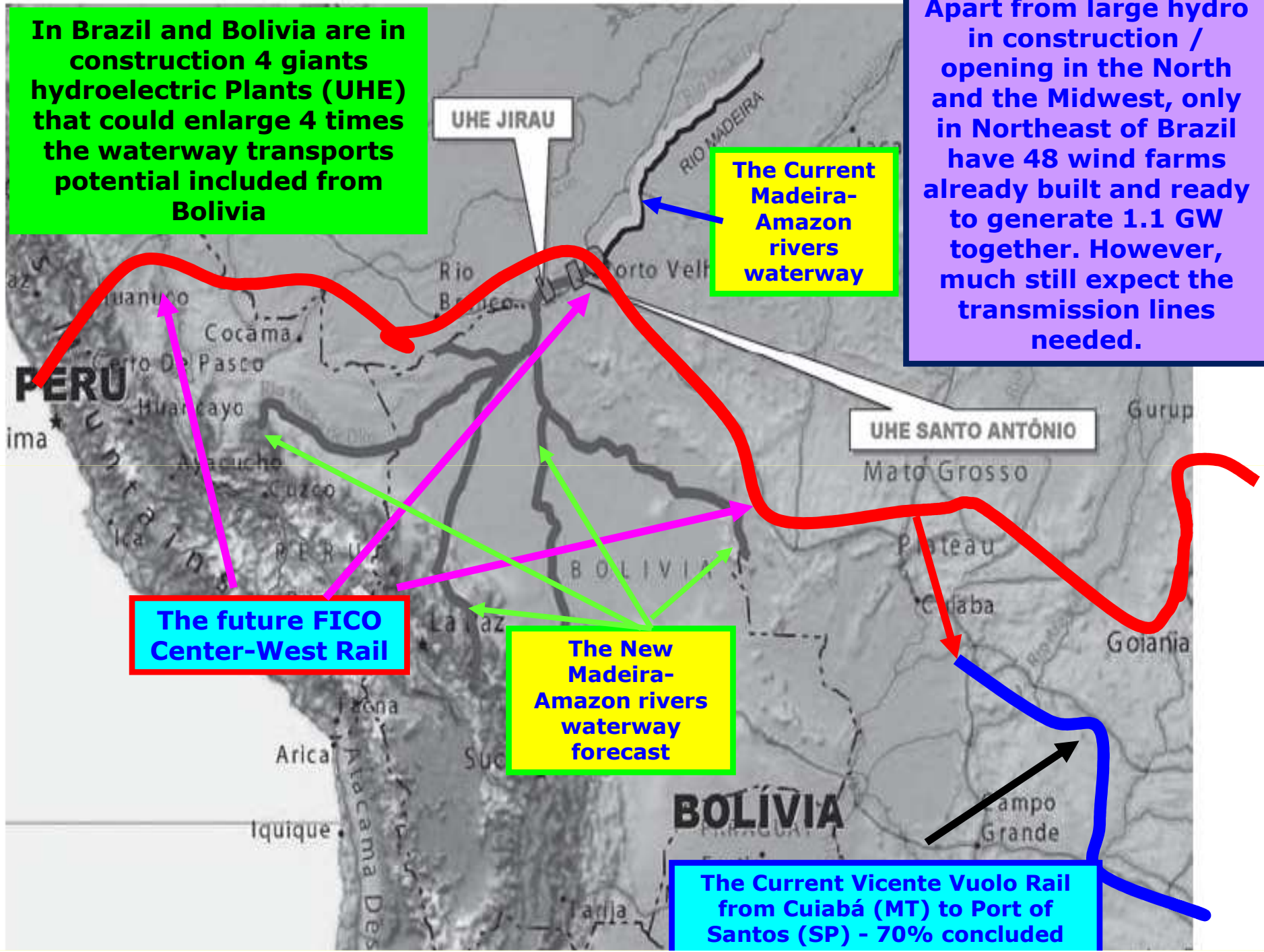
**Apart from large hydro in construction / opening in the North and the Midwest, only in Northeast of Brazil have 48 wind farms already built and ready to generate 1.1 GW together. However, much still expect the transmission lines needed.**

**The future FICO Center-West Rail**

**The New Madeira-Amazon rivers waterway forecast**

**UHE SANTO ANTÔNIO**

**The Current Vicente Vuolo Rail from Cuiabá (MT) to Port of Santos (SP) - 70% concluded**



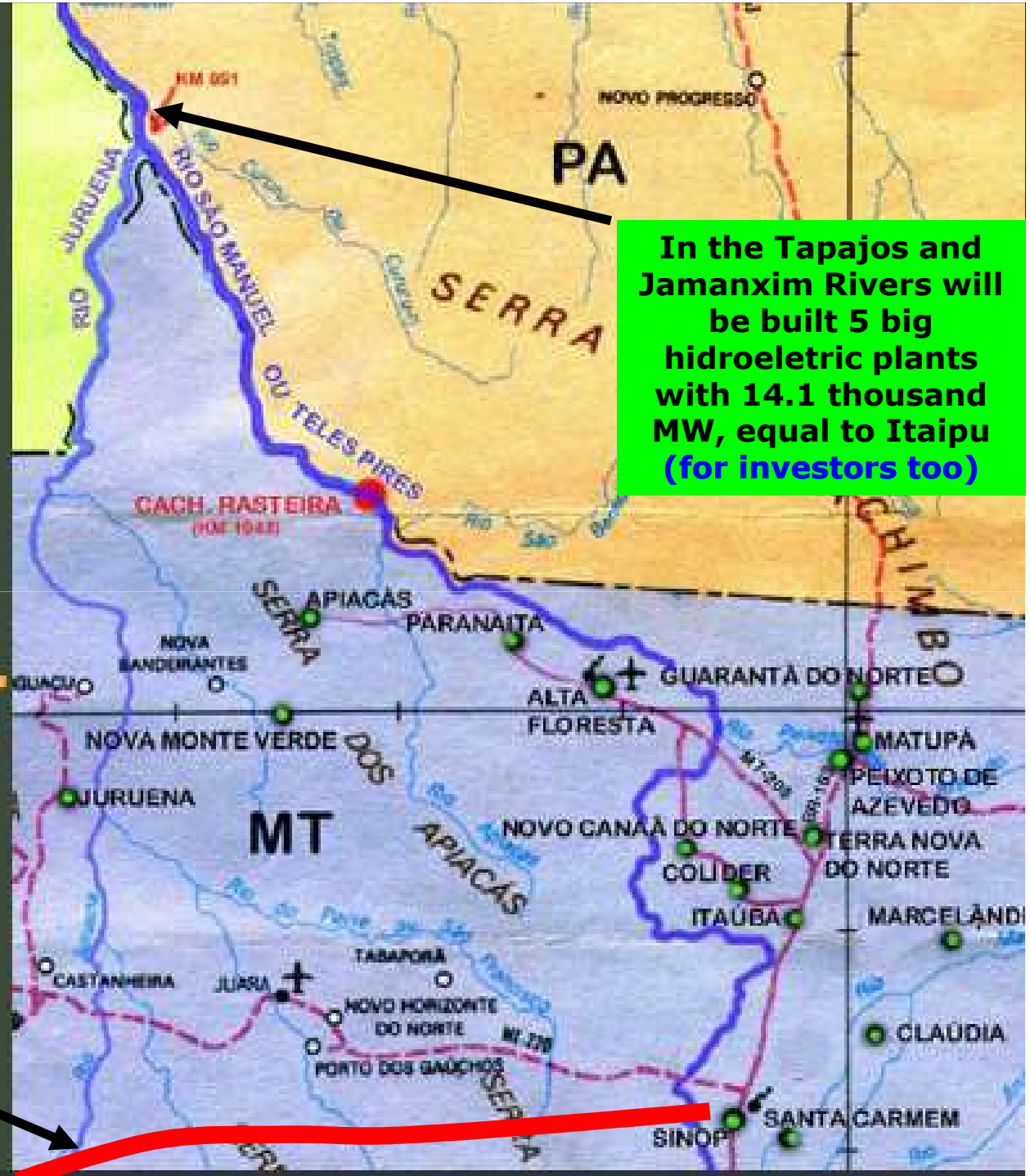


MT/ONF/DAG/EDF  
SALIMON

The Projected Teles Pires/Tapajos Waterway from Mato Grosso grains area and from Pará timber areas to the Santarem River Port (PA) but that depends on the IMMEDIATE construction of one sluice at Hydroelectric projected for the same site.

The future Teles Pires/Tapajos Waterway - INFLUENCE AREA in the Mato Grosso State, the largest producer of grains

The future FICO Center-West Integration Rail



In the Tapajos and Jamanxim Rivers will be built 5 big hidroelectric plants with 14.1 thousand MW, equal to Itaipu (for investors too)



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**HYDROELECTRICS - STARTING INAUGURATION OF A LARGE AND STRATEGICS PLANTS AND THERE ARE MANY STILL RUNNING, BIDDING AND PROJECTING**

The Jirau hydro plant (RO) to 3.7 GW



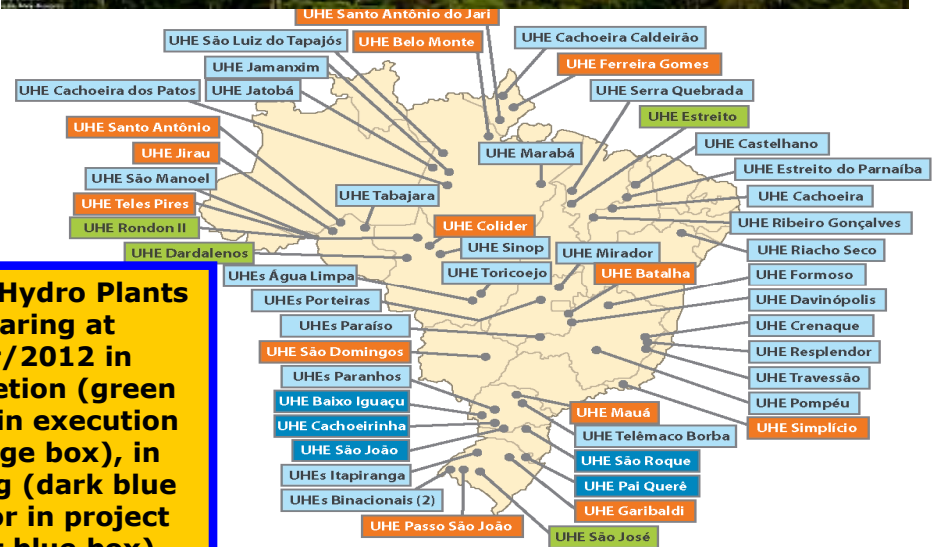
The Santo Antonio hydro plant (RO) to 3.1 GW



The future Belo Monte giant Hydro plant in accelerated construction to 11,2 GW



**Future Hydro Plants** nearing at Mar/2012 in completion (green box), in execution (orange box), in bidding (dark blue box) or in project (light blue box)



**TRANSPPOSITION CHANNEL OF THE SAN FRANCISCO RIVER (much water from the South-East to the poor and hungry areas of Northeast Region). At a cost of only US\$ 4.2 billion (compared to US\$ 18.0 billion in the future HST from RJ to SP; to US\$ 9.0 bi in the future Belo Monte Power and to US\$ 3.8 bi in the future Transnordestina Rail), with a length of 700 km (blue line below) it will benefit 12,0 million very poor people in semi-arid of Northeast, fighting hunger and bringing much demand. In nov. 2011, East Branch is 70% concluded and to be inaugurated in Dez./2014 and North Branch was 45% done and forecasted to Set./2016. Brazilian people expect some builders should be severely punished by abandonment stretches without reasons.**



# Brazil - Majors Seaports

Here will be the future Espadarte/Curuçá offshore Port, one of the deepest in the world and 100 km from Belém City. With 25 meters deep, it will receive ships of up to 500.000 tons, have not yet manufactured

In July/2011, VALE received its first giant ship type Valemax to 400 thousand tons., 01 of 19 orders to Korea

The future Ilheus/Aritaguá (BA) offshore Port to start in August/2013 to receive ships above 350.000 tons.

The Açu (RJ) future big offshore Port on rapid construction to receive ships of up 350.000 tons. The OLX also intends to expand the Southeast Port in Itaguaí City (RJ)

The Guaíba Island Offshore Port in Mangaratiba City (RJ) – It's a private port of VALE, being the third largest iron ore Port of the country (mainly to China), but with a depth but of only 13 m in the access channel

Over the past 40 years Brazil public seaports expanded from 28 to 49 and have more 130 private terminals. Today, they move total of 800.0 million tons / year equal to 10% of world total (+ iron ore), although BRAZIL STILL ONLY ANSWER FOR 1.5% OF WORLD TRADE. But, in 1970 they moved only 100.0 million tons





## Brazil - Major Sea & Rivers Ports pictures



Aratu | Cotegipe | BA



Ilhéus | BA



Itacoatiara | AM



Paranaguá | PR



Ponta da Madeira | São Luiz | MA



Rio Grande | RS



Santarém | PA



Santos | SP



São Francisco do Sul | SC



Tubarão | Vitória | ES



Porto Alegre | RS



Santa Clara | RJ

However, our Ports will need minimum total investment of **U.S. \$ 43.6 billion by 2030**, because it is estimated that our full ports demand extend of **258.0 million tons of general cargo to 975.0 million in 2030 (+277%)**. For example, currently, our largest port, the Santos, still only operates the equivalent of **22.5% of annual load operated by the Rotterdam**.

**The Government also needs to require fast modernization of old ports, because the operations are still very slow compared to our competitors. In the modern Port of Itaqui (MA), eg., a ship chinamax with 335 thousand tons takes between 72 and 74 hours (3 days) to dock, load and unberthing. Rather, they have to wait 5 to 10 days in the queue of the Bay of São Marcos. In Ports of the South, the situation is even worse.**

**NEW PORTS of Northeast and North Regions: Between 2.000 km to 3.000 km closer to the U.S., to the New Panama Canal and to Europe than the Ports of the South / Southeast, and much deeper (15 to 23 meters)**



**BARCARENA/VILA DO CONDE (PA) - Already with 07 large companies, including Norsk Hydro and Votorantim**



**ITAQUI-SÃO LUIS (MA)**



**PECÉM and SUAPE are almost 3.000 km closer Rotterdam than Santos / Paranagua / Victoria that still export 60.0% of the Country**

**PECEM (CE) - While idle, but should be a major exporter of minerals and fruit. Is already building yard for iron ore and other**



**SUAPE (PE) - It is the fastest growing port in Brazil and already installed with 100 companies (with 01 refineries and 03 shipyards) and 50 deploying (01 car and 01 steel). In 10 years to quintuple the current load, reaching 1.0 million containers, and reach 20 m depth**

# NORTH DEEP PORTS IN EXPANSION TOO

Another photo of the Santarem River Port (PA)



Another photo of the Vila do Conde / Barcarena Port (PA)



The Outeiro/ Belém Port (PA)



**AREA OF THE NEW TEGRAM (TERMINAL for GRAINS) IN PORT OF ITAQUI / SAO LUIS OF THE VALE DO RIO DOCE COMPANY ALREADY UNDER CONSTRUCTION (great área for investment in processing meat, eggs, fish, timber, biodiesel, juices, fertilizers, pesticides, machinery etc. ..)**

The iron ore docks



With this new TEGRAM, the Vale do Rio Doce company very expand its storage capacity only in this Port of only 2.5 million tons. to 15.0 million tonnes per year in 2020 (equal today to 8.5% of the total harvest grains 2012/13 forecasted to a record 185.0 million tons). The Midwest Region will be the biggest beneficiary, with the grains coming through the port by the new FNS North-South Railway (on completion). Currently, much of the grain production in the Midwest is drained by the ports of Santos and of Paranagua, paying expensive freight by trucks. Also, the region neighboring of the new frontier of grain in the Northeast and North, containing the states of Maranhão, Piauí, Tocantins and Bahia, will be major beneficiary.

The 103 old grains and containers dock

The future export corridor

area of the new tegram

# The Açú OLX offshore Port (Rio)

(to conclude in 2014)

The new private Port is under accelerated construction and it has 6 cots bulk carriers terminals and 4 cradles for pos-panamax cargo, and vessels to support offshore activities.

With a final depth of 25 meters, the Port of Açú is closer to Cabo Frio-RJ and near the MRS Rail (private) coming from MG iron ore minning regiones.

It will allow the chinamax or valemex vessels with a capacity of up to 350.000 tonnes, and the new generation of ships with capacity of up to super containers Thy 11.000 (standard container of 20 feet)

The offshore technique allows to built deep ports into any local in addition some may even be cheap.



In closer areas the chinese group WISCO Wuhan Iron & Steel and the italian group Techint-Ternium will build two steel in partnership with EBX / LLX. Also, there will be two large cement factories and vehicules and computers industries.

**Port of Açú in São João da Barra City (RJ)- A offshore Port in construction by LLX (Mr. Eike Batista) since 2007 and to conclude in 2014. With a total area of 9000 hectares, is expected to attract additional investment of R\$ 40 billion from other companies for assembly factories in the same place.**



**Port of Acu (OLX) - Situation in dez./2012 and model. Estimated to be the third largest in the world, moving 350 million tons of cargo / year in its 42 blocks, capable of receiving 14.200 vessels per year and to conclude in 2014. Already in 2013, the Port will operate partially, receiving machinery and equipments.**



The OLX also builds in same local the largest shipyard in Latin America and recent struck a deal with the giant General Electric that will build a large factory there.

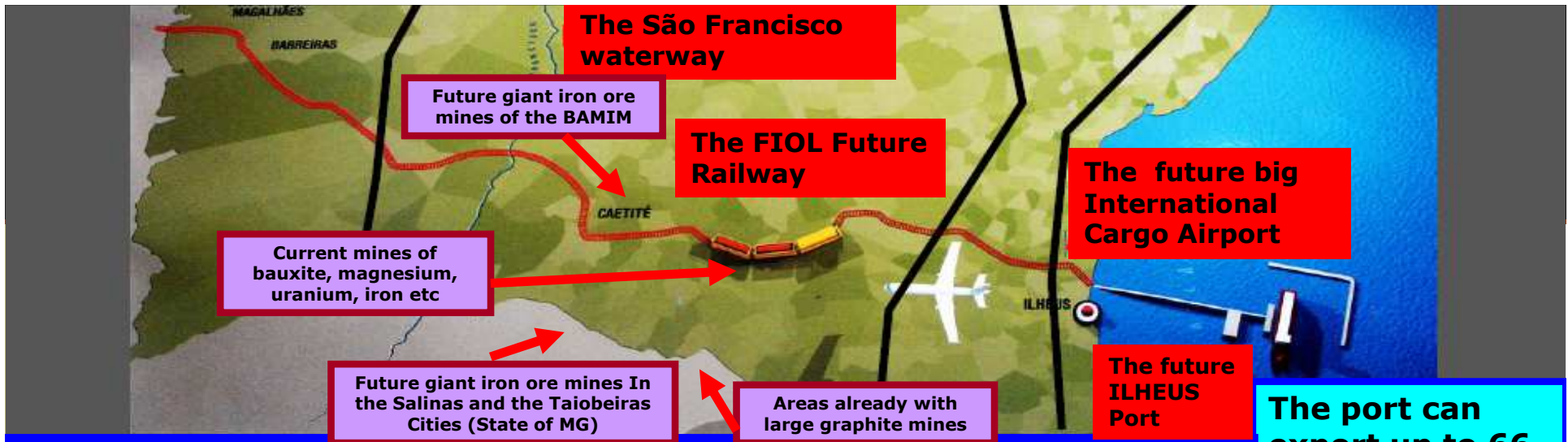


**Future oil-chemical-ore Port of President Kennedy (ES), with a future depth of 25 meters and to be complete in 2017 and operated by the same group of the port of Rotterdam (note: must receive a ore pipeline coming from State of MG mines**



**Future Southeast Port, offshore and private, in Itaguaí-RJ (also of OLX) under construction since 2010 and to be complete in 2013 too, with 21 meters of deep sea and 765 meters extension**





**Graphic design and forecasts dates for the future private Offshore Port the Ilhéus-Aritaguá in state of Bahia (to start in Aug./2013 on public private form) at the end of the FICO rail more the FIOLE rail with depth of 19.0 meters for giant ships up to 300.000 t. (minerals, containers, general cargo and grain)**

**The port can export up to 66 million tons / year of various products, but require minimum investments of US\$ 3.5 billion. Some Miners as the Rongxin Capital-Bahari Still, more the Bohai Steel Group and the Bio Gold already announced they intend to invest in steel or processor in the Port area.**

**berths for mooring ships**

Item N°	Ship types	length	DWT	Deep	N° Berço	Boca (m)
1					2	48,5
2	Soja, grão, farelo	290	160.000	17,5	1	44,0
3	Etanol	170	160.000	17,5	1	23,5
4	Fertilizantes	240	70.000	14,0	1	36,5
5	Carvão	315	70.500	14,0	1	48,5
6	Prod.Siderúrgico	290	160.000	17,5	1	44,0
7	Clinker	290	160.000	17,5	1	44,0
8	Outros Minérios	290	180.000	17,5	1	44,0
9	Containers	237	40.000	14,0	1	32,2
10	Carga Geral	209	40.000	12,0	1	30,0

Item	Fase 1	Fase 2
Minério de Ferro	2 Berços tipo 1	2 tipo 1
Soja	1 Berço tipo 2	1 tipo 2
Etanol	1 Berço tipo 3	1 tipo 3
Carvão	1 Berço tipo 4	1 tipo 5
Clinker	1 Berço tipo 5	1 tipo 7
Fertilizantes	-----	1 tipo 4
Containers	-----	1 tipo 9
Total Berços	6 Berços	8 berços

Fonte: Projeto conceitual preliminar – Ilhéus/BA



**The Emma Features: Currently, is the largest container ship operating in the world; Operates on the route between Rotterdam (Netherlands) and ports in Asia, taking 63 days (round trip); Make calls at ports in China, Japan, England, Sweden and Netherlands; The silicone paint and the hull below the waterline reduces the resistance to the advance of the ship and save 1.1 million liters of fuel per year. The paint is environmentally safe.**

## **Emma Maersk giant Ship**



### **GENERAL FEATURES**

Type	Container Ship
Tonnes Capacity	170.974
Length	397 meters
Width	56 meters
Draft	15,5 meters
Heigth	30 meters (from the deck to the keel)
Propulsion	01 diesel engine with 80 MW (109.000 HP)
Speed	50 km/ per hour (31 miles per hour)
Container Capacity	11.000 TEU'S (156.900 tonnes)

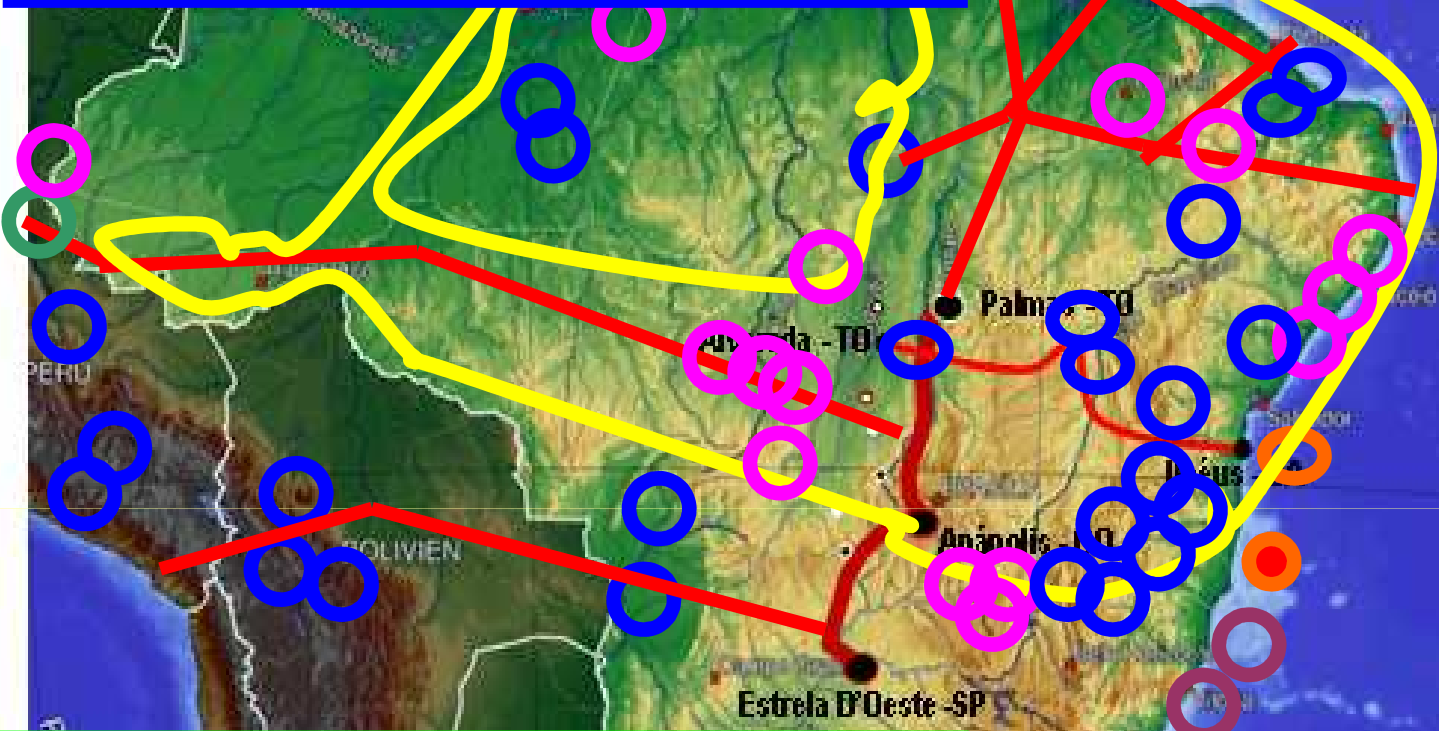


**The PANAMÁ New Channel - While not directly benefiting the heavy loads coming from Brazil - for not allowing large ships, just for post Panamax with 75.000 tons (and because our better future access to the Pacific by ports of Peru, Bolivia and Chile) - The New channel GREATLY BENEFIT OUR CONTAINER CARGO COMING FROM THE NORTHERN REGION (Manaus, Belem, etc.). Expected to be completed in 2014. It has 81 km of route, with up to 18 m deep water for up to 50 ships / day (now 35, but with long lines) with widths up to 48 m. The expectation is to triple the current charge (from 4 to 12 thousand containers by ship/year), But Also Expected To Be Very Expensive Toll.**



**"INFLUENCE AREA of the AMAZON FOREST in 2020 with more minerals, wood production on sustainable & Legal management forests Opportunitites and legal Projects for biodiesel of palm tree and others palm oil plants; rubber; medicinal plants and herbs extraction and exotic fruits pulp & juices, handicraft etc.."**

**Future rails under construction or under licenses releases**



Acess to fertilizer more several ores of Peru + to Pacific Sea by Peru Ports closer 3,000 km from Asean ports Than our current Tubarão Port

Current and future Fertilizer giant mines (self-sufficiency in more 9 year even for exports)

Giant mines of FE, MN, AL, AU, NI, ZN, TA, U e graphite + oil more gas in Brazil, Peru and Bolívia

The Future offshore Port Ilhéus/Aritaguá + steels (starting)

The future Pres. Kennedy offshore private Port (oper. by the Rotterdam Port) + oreduct from the MG State

The Açú offshore private port (start in 2013)+ future Southwest Port, more steels (all of the EBX Group

**THE NEW BRAZIL 2020 AREA:** for sustainable and high profitable agribusiness Projects + ores + future great all consumption //obs: excluding Amazon Forest

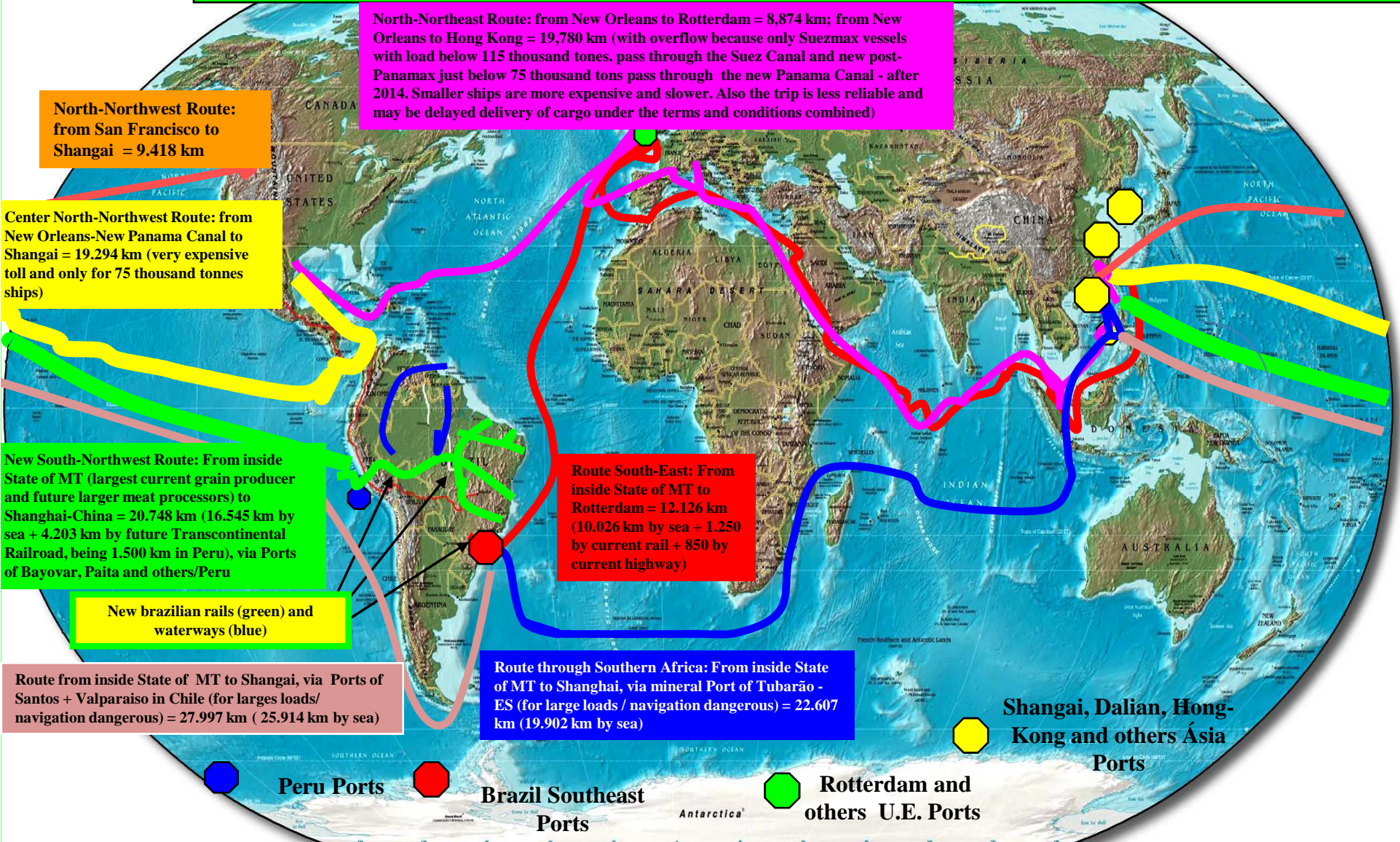
**"THE MANY AND NEW OPPORTUNITIES FOR PROGRESSIVE MUCH MORE HIGH PROFITS IN THE CENTRAL NORTH AND THE NORTHEAST REGIONS (higher revenues and very lower costs)"** with the continued increase in local demand - by the progressive migration and development - and much more exports, following the conclusions of the various railroads, offshore ports and hydro, all giants, under construction from 2005 to 2019. From inside the State of MT via Transcontinental Railroad more ports of Peru (some deep) we will be about 1.859 kilometers closer to Shanghai Port than port of Tubarão-ES (ores and grains) via South Africa in large ships or 7.249 km more closer than via Santos + Valparaiso (Chile).

**"SCOPE AREA of THE AGROVISION NEW BRAZIL 2020 TEORIC PROJECT"** (excluding the Amazon Forest) with very much sustentable productions of foods, meats, grains, bioenergies, minerals, timber products etc. and more consumers, fast and easy access to Latin American & Pacific, cheap fertilizers etc."



# AMERICAS- CURRENT AND FUTURE SHIPPING ROUTES

Brazil, possibly, will have greater competitiveness in the Pacific to Shanghai-China and other Asia than the East Coast of the U.S. (if by the new PANAMA CANAL) with the new Transcontinental Railroad until some deep Ports of Peru and Chile, through Bolivia, and embarking / disembarking giant ships with ore, grain, ethanol, sugar, meat, general cargo and giant containers ships as the giant Emma Maersk



# PROJECT: "THE AGROVISION NEW BRAZIL 2020"

**Major business inclusions from 2020 to 2050 as results of new logistics + transports and self-sufficiency in fertilizers & energies.**

**Net income of soy inside State of MT can increase to us\$ 5.00 / sc, results of - us\$ 1.50 by the least cost with fertilizer, chemicals and freights + us\$ 3.50 for better prices exports for Asia;**

**In this promotional Project "AGROVISION NEW BRAZIL 2020" area included in a giant heptagon zone – excluded Amazon forest - has between 150.0 to 200.0 million hectares available to enter or re-enter cultivates for grains (for local processed meats ou for exports); biofuels; eucalyptus and others for coal, gas, chips or eletricity; fruits; timbers crops and newpastures for milk etc., all with sustainable and environmentally cares;**

**In the giant area of the Amazonian forest (300.0 millions hectares) law allows to explore mining and natural gas and sustainable and responsible cultivation of exotic fruits, aromatic and medicinal plants, timbers, rubber trees and palms trees for foods or biodiesel;**

**"In the "NEW BRAZIL 2020" area - including Amazon forest area – there is around 60% of the Brazil area, but holds only 42% of Brazil current population (190.0 million). In 2040, Brazil population should expected to stabilize at 220.0 million inhabitants with a little less 50% located in the "NEW BRAZIL 2020" zone (increasing at least from 80.0 to 100.0 million inhabitants, i.e., at least +20.0 million); Regional consumption will increase vey much;**

**There will be intense and progressive migration for the "NEW BRAZIL 2020" giant Region – excluding Amazon forest area - coming from the Southeast, Southern and Northeast Regions. Throughout the Region should be installed by 2050 about 40 big cities with 100 thousand to 1.0 million persons (state capital +neighboring)). If current low GDP "per capita" in the whole region enlarges 20% in U.S. \$, the grain production in Brazil already would have to double;**

**CONCLUDING: THE AREA INCLUDED IN THIS PROMOTIONAL PROJECT "AGROVISION NEW BRAZIL 2020" IS THE BEST PLACE FOR NEW INVESTMENTS AND EXPANSIONS OF AGRIBUSINESS, MINERALS, TIMBER, FOODS ETC. BOTH EXPORTERS OR SELLERS TO THE CLOSER REGIONAL MARKETS, INCLUDING LATIN AMERICA AND STILL POOR NORTHERN & NORTHEAST REGIONS OF BRAZIL.**

## Project "The Agrovision New Brazil 2020" - December 2012

✓**PORTS:** a) the offshore Port of Açú (RJ) of the OLX- Eike Batista is 95% done (+2 steel and the giant GE and to be inaugurated in 2014; b) the offshore Port of Ilheus (BA) will be start in Aug./2013 (on public private form); c) Construction in Progress of the Southeast Port of the OLX (RJ); d) Ports of President Kennedy-ES; Barcarena-PA and Vila do Conde (PA) in phase of projects;

**WATERWAYS:** Completed sluice at hydroelectric of Tucuruí (PA) in the Tocantins River and starting more 2 sluices at Estreito (MA) hydroelectric inaugurated and at Lageado (TO) on completion. Start environmental studies to build 6 futures hydroelectrics and waterways on the Teles Pires-apajós rivers (MT+PA States);

**RAILWAYS:** a) FNS - North South Rail is 95% completed and to be inaugurated in oct./2013; b) the FNS South Branch Extension from Anapolis (GO) to Estrela D'Oeste (SP) connecting to The Vicente Vuolo old Rail with a final destination to the Port of Santos (SP): in works to be inaugurated in 2017. All tracks already are bidding; c) FIOF future rail - From the future Port of Ilheus (BA) to Figueirópolis (TO) connecting the new FNS: works are accelerated on the 1st segment from Ilheus (BA) to Caetité (BA); the construction basis site farthest already in the Correntina City in mid-term and to be inaugurated in 2016. All tracks are already paid and arriving from abroad; d) FICO future Rail - from new FNS tracks in Campinorte (GO) near Uruaçu (GO) and Brasília (DF) to Vilhena (RO) with a final destination to the Ports of Peru: auction for construction in 2013; e) future FTN - TransNordestina Railway: works restarted from Eliseu Martins-PI to the Port of Pecem-CE and from Salgueiro (PE) to the port of Suape-PE, to be inaugurated in 2016; f) the Vicente Vuolo/ALL old Railroad (ex-Ferronorte) - Extension inside branch: rails already reached the Rondonópolis City (MT) and to be inaugurated in 2013. It already carries grains from Alto Araguaia (MT) to the Port of Santos (see after about new iron ore mines);

**HIGHWAYS:** a) BR 364 from inside of the Acre State to the border with Peru is on construction. Along part of this highway will be built the Transcontinental Railroad or the Interoceanic South Rail (FICO + FIOF + railroad of Peru) with 4.400 km from Brazil inside to the Port of Bayovar and others in Peru; b) BR 163 from Cuiabá (MT) to the Port of Santarém (PA): on accelerated Works by Army Engineering Division and to be inaugurated in December 2013;

**HYDROELECTRICS:** a) the Belo Monte (PA): under construction; b) The Jirau and on the San Antonio (RO) just has opened first phase; c) At the end of studies is the binational Guarajá-Mirim (RO) Plant in the border with Bolivia and of many other power with midsize;

**FUTURE IRON ORE MINES** - recently discovered or revealeds (all in very poor regions and with very low demands of goods): a) closer the town of Salinas (MG) on the Jequitinhonha Valley and 600 km from the port of Ilheus by the FIOF future railroad; b) based in the town of Paulistana (PI) next to the Transnordestina future rail; c) near the town of Coração de Maria (BA), far only 160 km to the port of Cotegipe/Aratu (BA); d) near the town of Mirassol D'Oeste (MT) on the border with Bolivia, near the Vicente Vuolo/ALL and of the FICO railroads. ALL recently set up the Vetri mining also to benefit and to transport iron ore from the Corumba/Ucurum City mines on State of MS to the Port of Santos (that mines is closer to Mirassol D'Oeste (MT) mines); e) closer the town of Inhamuns (CE) more the town of Pentecostes (CE), near the port of Pecem (CE), by CFN old rail and by Transnordestina future Railway; f) near the town of Jucurutu (RN) and the town of Cruzeta (RN), carrying by the CFN old rail to Port of Pecem (CE) or by FCA old rail to the Port of Suape (PE).

## **SOME UPDATES IN 2012 (others are contained in the work)**

- 1) In the U.S., the logistics cost is 8.0% of GDP while in Brazil reached 12.0% of GDP (value much smaller here than the U.S.). Only Brazilian companies would save up to US\$ 83 billion / year, if they had a logistics working well here as in the U.S.. In Brazil, companies spend on average 13.0% of their logistics revenues, compared to 7.5% in the U.S., but the capital goods industries in Brazil spend 22.7% with logistics; the construction spend 20.9%; the miners spend 14.6%;**
- 2) Recent, countries of the UNASUR - Union of South American Nations created an effective program, similar to the PAC from Brazil to South America and they will invest U.S.us\$ 100.0 billion in 520 works of logistics and infrastructure;**
- 3) Study of Standard & Poor's for the Southern Cone in Nov./2012 estimated that only investments in infrastructure in Brazil could reach between US\$ 500 billion and US\$ 700 billion over the next 5 years (an average of us\$ 100.0 billion per annum, inclusive of Governments), all to modernize various sectors, especially roads, ports and airports;**
- 4) It is expected that only our Ports need minimum total investment of U.S.\$ 43.6 billion by 2030, because it is estimated that demand our full Port extend of 258.0 million tons. to 975.0 million in 2030 (+277%). Since the railways is estimated that will required total investments of U.S. \$ 80.0 billion to renovate and expand;**
- 5) In the second semester/2012, besides the works in progress in PAC 1 and PAC 2, the Federal Government launched 04 investment programs to streamline logistics and infrastructure in Brazil between 2013 and 2019. In all, at least R\$ 195.0 billion, of which R\$ 91.0 billion in railways, R\$ 54.2 billion in ports, R\$ 42.0 billion on highways and R\$ 7.3 billion in deploying 100 new regional airports;**
- 6) According to the Government, only the overall execution of investments in PAC 2 has reached R\$ 181.5 billion in January-September 2012, i.e. +26% than the same period in 2011. Accumulated in 2012, the amounts invested totaled R\$ 385.9 billion, i.e. 40.4% of total investment planned by 2014. The big advantages of the PAC – Growth Acceleration Programs is that resources to ensure from hiring to completion of the works and the Government undertakes to disclose monthly values applied and the results achieved;**
- 7) PRIVATIZATION IN DIRECT OR PPP MODEL - The government has plans for privatization of more highways and already with many transfers in 2011 and 2012 and with several scheduled for 2013. In this first stage will be over 10,000 km of the BR (Brazilian highway): 050 (GO-MG); 060/153/262 (DF-GO-MG), 101 (BA) 153 (TO-GO), 163 (MT), 163 / 267/262 (MS) and 262 (MG-ES). Also, the Government created equal Plan for privatization of 12 railroad tracks, including some under construction or bidding. Be auctioned / financed the construction and operation of up also to 10,000 km of railways by private companies, but the public sector will purchase all transport capacity, after selling to those who want transports or bankrolling costs. Also, the Government has privatized 03 major airports in 2012 and plans to privatize 15 other midsize in 2013;**
- 8) In the case of Brazilian highways, by successive errors of previous plans; for lack of resources and mainly by non-prioritizations, our public highways with about 1.5 million km (one of the largest networks in the world) barely are paved (only 13.0%) and the majority paved is already bad conserved, except those already privatized (hence this is the priority of the current government). In recent years, the priorities needed to be sanitation, health, education and well feed the poor. In October/2012, there were 68,000 km of paved roads with problems between 100,000 kilometers evaluated;**
- 9) In the Ports, the government will allow private terminals can to compete shipments of containers and others cargos with public ports. Already in the Railways from 2013 should begin to apply part of the free access to the rails;**

**10) Over the past 40 years, expanded from 28 to 34 public Ports over 130 private terminals. Today, all move 800.0 million t. /year, equal to 10% of the world volume of Ports (in Brazil is more of iron ore), but in 1970 were 100.0 million tonnes. The Government will also require rapid modernization of existing ports, as operations are still very slow. In the modern Port of Itaqui (MA), e.g., a Chinamax ship with 335 thousand tons takes between 72 and 74 hours (3 days) to dock, charge and unberthing. Rather, they have to wait 5-10 days in row of the San Marco Bay. In southern ports, the situation is even worse and operators have to pay expensive fines ("demourrages"), very endearing freight. Currently, the Port of Santos has only 22.5% of the operational capacity of the port of Rotterdam;**

**11) In 2013, unfortunately, it is estimated that if nothing is done, the value of the Brazilian ocean freight can extend up to US\$ 1,500 (up +60%), bringing the total to US\$ 3,300 per 40-foot refrigerated container as international shipowners want, all for lack of competition and lack of vision. Also, while in Brazil Ports, the average cost of moving a container is US\$ 200, in Rotterdam and Hamburg drops to US\$ 110 and the ports of Asia for only US\$ 75. Incredibly, few of our ports work for 24 hours, although the government encourages and cover it, including Special Plan;**

**12) The future Port of Acu-RJ (OLX) should be completed in 2014, but in 2013 already receives loads such as machinery and equipment. Estimated to be the third largest in the world, moving 350 million tons. loads / year in its 42 blocks, it is capable of receiving 14,200 vessels per year. Recent beyond already provided addition of various companies (steel mills, vehicle, cement, computers), OLX struck a deal with the giant GE to build plant in place;**

**13) Besides him, the OLX also ends in 2013 the construction of the Southeast Port in Itaguaí (RJ), with up to 21 meters deep water and extension of 765 meters;**

**14) Have the future Port of Ilheus-Aritaguá (BA) had its environmental permit approved in mid-2012 and its PPP construction should start in august/2013. At the end of 2012, 03 Chinese industries announced intention to assemble steel near that Port;**

**15) In environmental release phase, we have the Port of Espadarte/ Curuçá (PA) - A river port in the state of Pará and 100 km from the Belém City - which shortens by 400 km journey between the giant iron mines of the Carajás City (PA) and giant vessels, by folding the extraction / exportation. Recently, VALE purchased 3.000 hectares at the site;**

**16) Also is in Project phase the offshore oil-chemical-mineral Port of the President Kennedy City (ES), including receiving a 400 km ore pipeline, coming from the mines of the Ferrous Resources at the Congonhas City (MG). Passing through 25 counties, it will transports 25 million tonnes of iron ore / year in the first phase, which may expand to 50 million tonnes;**

**17) Betting on the future FNS - North South Railroad (to usher in oct./2013) and on progressive increase in Brazilian grain production, the VALE deploy a giant grain terminal (TEGRAM) at the Port of Itaqui / São Luiz to 15.0 million tones. in 2020 (equal to 8.5% of 2012/13 total production with a record of 180.0 million tons.). The current local capacity is only 2.5 million t.;**

**18) In Brazil, the BNDES National Bank for Economic and Social Development is analyzing 6 different rail routes for future access from Brazil to the Pacific Ocean. However, it is difficult to define the best financing or investing because there are different gauges, very different conservations levels, actual capacity of transporting very heavy loads, extent and required value, larger and real benefits for developing poor areas in Brazil and mainly the political strife, especially between the Bolivia (no port) and the Chile (which is not to allow full access to its ports for Bolivian);**

**19) Undoubtedly, the Route that could more to favor and to leverage the poor areas of Brazil is via Peru. Also by economic results, especially with ores and fertilizers, the return to investors would be more faster and very much profitable. It would be part of the future Transoceanic or bioceanic railroad from Peru to the Rio de Janeiro State (including the future FICO Railway in Brazil passing through the states of AC, RO and MT more for the FCA old Railway passing through interior of GO and MG States). The deep Peru Port of Bayovar, belonging to the VALE Peru, for example, besides being 3.357 kilometers closer to the Shanghai Port on China than the Brazilian minerals deep Ports of Tubarão (ES) and Sepetiba (RJ), both VALE too, is near large deposits of phosphate of VALE - the Vale do Rio Doce company, more copper and others in Bayovar mines. The Peruvian government has asked for its military forces urgent studies to project and to deploy this railroad with approximately 1,500 km between the Region of Paita on Peru (Ports of Bayovar, Sechura and Paita) to the Pucallpa City on the border with Brazil (State of AC) and passing in areas localized just above the peaks of the Andes. The estimated cost is US\$ 10.5 billion, and investors will have 60 years to operate freely. Remember that Peru has extensive experience in deploying and to operate railroads in high altitude (there are stretches up to 4,300 m in height);**

**20) However, there is another Bolivian route with 4,400 km being already 94% ready and connecting the Port of Santos in Brazil to the Port of Arica in Chile, through the Corumbá City (MS - Brazil) more center-south Bolivia and northern Argentina. There are only 45 km in Bolivia to build and about US\$ 2.5 billion (amount to be financed by IDB or BNDES or CAF). However, besides little benefiting the poorest and with the greatest potential in Brazil (North Central), such railroad coming up in different gauges, low conservation levels, low axle load capacity and, worse, have the serious disagreements between Chile and Bolivia (Country without access to the sea, but that prioritizes connections via the port of Ilo in Peru). Brazil also would have to invest at least US\$ 340 million in renovation of the old Novoeste rail from Bauru City (SP) to Corumbá City (MS);**

**21) In Modal rail, unfortunately, the amount charged by freight trains in some inside places Brazil in 2012 was more expensive than shipping by road, all because the carriers want to quickly recover the investment in the previous sections, but, indeed, by ambition or lack of long-term vision;**

**22) Since 2010, several manufactories of locomotives and wagons decided to settle in Brazil, or streamline existing plants;**

**23) The future FNS North South Railroad is 95% complete, missing only the construction of rail yards and some operational deviations. It should be opened in October/2013 and with many companies already waiting. The works quite delayed in 2012 due to required interventions in the VALEC its executing and also even by many legal actions regarding the amount paid for compensation of land which through the railroad;**

**24) Beneficially, the current Vicente Vuolo Railroad (private and own the ALL) have stretch at final completion until the Rondonópolis City and should reach the Cuiabá City in 2016;**

**25) The most advanced plot of the works of the future FIOL West-East Railway already reached the Correntina City (BA), in half the scheduled distance between the Ilheus City Port (BA) to Figueirópolis City (TO) where it meets the FNS future Railway to be inaugurated in oct./2013. The works are fast;**

**26) Fundamental to food right and to develop the poor areas of the Northeast, the future Transnordestina private railroad is very slow, but it has moved 345 km of the 1728 km planned. The daily rate of expansion of that rail is only 800 meters, although the original design foresaw 2.5 km/day. Indeed, the works of the Transnordestina Rail are being delayed by successive difficulties of achievement of environmental permits; payment of expropriations and the insensitivity of the organs' own governments concerned with the poor. However, what most delays are the price negotiations followed the companies behind more money from the Government, analysts say;**

**27) The great difficulty for advancing faster railroads and other key works for the poorest regions of Brazil are not so much the delays in environmental clearances necessary nor agreements for payment of compensation for the areas, but mainly the followed interventions and work stoppages by the Court of Accounts, without doubt, laudable and beneficial. However, for some sociologists and serious political such actions and questions should precede the works or are via heavy remedial / punitive, including prisons, but after its end and never in the implementation stage. No doubts, they hurt a lot those poorest regions and the Country, looking more actions by unknowns of local realities more probably insensibility with their poorest people;**

**28) Also The Brazilian government needs require rapid modernization of existing railways, because: 1) they are used only 20% of the time shipping and 80% loading / unloading; 2) In our best railroads, the "daytime headway" (range time between trains) is still 20 minutes and more over than 14 minutes from the main international competitors (only 8 minutes in some urban metros); 3) Our average speed is very low (only 25 km / hour, compared to 80 km/ hour in the USA); 4) Although there are many different gauges; 5) 90% of wagons still return empty, but keep coming back, indicating that there are conditions of time and of space available, but never for another cargo shipments, mainly from competing companies, especially if they are for exports, analysts say.**

**END**



## **THE AGROVISION NEW BRAZIL 2020 PROJECT "DATA RESUME"**

✓In October/2011, the world reached 7.0 billion people and is expected to expand to 9.0 billion in 2050, when there still will be 14.0% of hungry and malnourished (compared to 15% today). Today, more than 50% already live in cities and is expected to expand to 70% in 2050. In Brazil, urbanization is much larger than the world average because between 1960 and 2010 (50 years), our urban population increased 5 times;

✓In Brazil, only 20% of people still live in the country (80% live only 200 km from the sea), whereas in India 70% live in the interior, in China 50% and in the U.S 26%. However, in China in next 05 years, should be to build 50 million new homes. In 2020, only the Chinese middle class is expected to reach 240 million people, twice the current. In 2025, should have 221 cities with more than 1.0 million people in China (compared to 35 in Europe today);

✓In Brazil, incredibly, the "per capita" income (although in elevation) is very poorly distributed and the absolute poverty rate reached 28% in 2008. In 2011, according to IBGE, Brazil still had 16.3 million people in extreme poverty - equal to 8.5% of the country - particularly in rural areas, where 25.0% of people still living in poverty mainly in the North and Northeast Regions ("focus of this work");

✓Even with recent advances in Brazil grain harvest, we are still only the 5th World grains producers (overcome by the USA, China, India and EU 27). Our average yield is still very low (except for soybeans, coffee and chicken) and we have no guaranteed net income and not enough resources to enter / re-enter new areas on social and environmentally sustainable productions manner;

✓Also, our total exports has reached only 1.5% of world total, and worse, commodities are 70% and only 5 of them represent 47% of sales in 2011 (up from 28% in 2006). WITH INTERNAL VERY HIGHS COSTS AND TAXES AND SOME UNFAVORABLE EXCHANGE RATE (as some analysts), OUR INDUSTRY CAN NOT COMPETE INTERNATIONALLY and are left with the internal market (for now);

✓In 2012, World oil consumption reaches 88,8 billion barrels, up from 87,0 billion in 2011. The current productions are expected to rise slowly until 2030 and then falling over. The world average prices may rise from the current \$ 100/barrel for between \$ 292 and \$ 374 in 2020. In China today there are only 36 cars for every 1.0 million people, up from 487 in Europe;

✓In 2011, Brazil - with only 5% of biodiesel in the fuel mix - was the world's largest consumer of biodiesel, with 2.8 billion liters, followed by Germany with 2.6 billion (with 20% biodiesel in the mixture). In Brazil, AS EFFECT OF REMEDIATION BY ADOPTION OF BIODIESEL ARE ALREADY AVOIDED 11 000 DEATHS AND 78 000 HOSPITALIZATIONS OF PEOPLE EACH YEAR;

- ✓ **In 2012, sales of fertilizers in Brazil reach 29.0 million tons, 4.0% more than in 2011 (28.3 million). We still have much dependence on expensive imports, but possible self-sufficiency in 9 years, when we change for exporters;**
- ✓ **In Asia, Governments prioritize the construction of the future Railroad "TransAsiática" with 14,000 km from Bangkok to Istanbul and will benefit 28 countries, including getting loads of 114,000 km of surrounding highways. Such railroad more highways serve the region with 26% of global GDP, 3.9 billion people, 30% of world exports and 12 of the 20 largest cities in the world;**
- ✓ **The Peruvian Government also prioritizes studies for the construction of a rail from the border of Brazil/State of Acre (end of our Transcontinental Railway) to the Ports of Paita, Sechura and Bayovar (all in ampliations). The funds may come from China or from a partnership with Brazil. The Pacific Port of Callao is 16,100 km from the Port of Sanghai (China) and the current depth is 15 meters. In addition it is expected the construction of the nearby Hub Port of "San Lorenzo" with record depth of 45 meters;**
- ✓ **In Brazil, due to logistical still blocking, the cost of shipping soybeans from the Sorriso City (MT) to the Atlantic Port of Santos (State of São Paulo) in 2011 was for \$ 120 / t, up from only \$ 20 / t cost of the field to the port in Argentina;**
- ✓ **In the case of railways, Brazil quickly needs of 52,000 km of really operations tracks and for this needs total of US\$ 80.0 billion of new investments, being 30% in the sections and 70% on building of urgent deviations in urban stretches. About 65% of current Brazilian rail grid is down, including 25% unable to recover;**
- ✓ **Although fundamental to reduce poverty and regional inequalities and to the full development of country at the moment there is only 10.000 km rails on very slow works. The reasons are many and constants legal embargoes (bids poorly written and full of holes) more environmental licenses refusals or intentional delays showing unprepared, inefficiency, personal decisions only and unfairness in dealing with the "public thing". Also, 71% of our charges are still iron ore and almost no time for transport other charges (space is left). In Set./2011, among the major problems for not rail hiring, 38% of customers said that the cost of rail was still very high, 32% said there was no specialized wagons and 30% said that deadlines are not reliable because speed is very low and there are many stops;**
- ✓ **The Brazil Government needs to require the current railroads a rapid modernization, because: 1) uses only 20% of the time shipping and 80% loading / unloading, 2) In our the best railroad, the "headway" day (interval time between trains) is still 20 minutes, up from 14 minutes of the main international competitors (only 8 minutes in urban subways), 3) Our average speed is very low (only 25 km / hour, compared to 80 km in the USA), 4) Although there are many different gauges, 5) Around 90% of wagons still come back empty, but always back, indicating that had available time and space conditions but never for loads of competitors, especially if they are for export;**

✓In Brazil, the rail charges could double by 2030, compared to 2000. From 2013, a new determination prevents / hinders the rail monopoly. If continued current high public and private support, in 2025, 35% of cargo will be transported by railroads more 29% by waterways;

✓In the case of public ports, in the past 40 years, they expanded from 28 to 34 but have more 130 private terminals. Today, move 800.0 million t. / year, equal to 10% of the global volume of ports (more iron ore), but in 1970 were 100.0 million tonnes. The Government will also require rapid modernization of current ports, as operations are still very slow. In the modern Port of Itaqui (MA) p.exe., one ship Chinamax with 335 thousand tons takes between 72 and 74 hours (3 days) to dock, charge and unberthing. Rather, they have to wait 5-10 days in row of the San Marcos Bay. In ports of South Brazil, the situation is even worse and operators have to pay expensive fines ("demourrages"), very endearing freight. Currently, the Port of Santos has only 22.5% of the operational capacity of the port of Rotterdam;

✓Among the new Ports, we highlight the new ports in the Northeast and North Regions for being between 2,000 km to 3,000 km closer to the U.S., to the New Panama Canal (opening in 2014) and to Europe than the old Southern/East Ports, and are well deeper (between 15 and 23 meters). The Port of SUAPE (PE) is the fastest growing and already with 100 established companies (01 refinery and 03 shipyards) and 50 implanting (01 vehicles and 01 steel). In 10 years it should quintuple charge, reaching 1.0 million containers, and reach 20 m depth. The port of PECÉM (CE) is still idle, but should be a major exporter of minerals and fruit. At the Port of Barcarena / Vila do Conde (PA) there are already 07 large companies (including Votorantim and Norsk Hydro);

✓Among the giant Ports under construction, there is the private Port São João da Barra / Acu (RJ) of the EBX / OLX Group to conclude in 2014 with a final depth of about 25 m. It should be the 2nd largest port in the world, moving 350 million t. stemmed of 14,200 vessels / year. In its 9.000 hectares, it will have many private companies (2 steel, 02 cement plants, computers factories, vehicles) plus possible additional investments of US\$ 40 billion in other factories. Recent it closed agreement with the GE for installation of a large factory. Beyond him, also OLX ends in 2013 the Southeast Port in Itaguaí (RJ), with 21 meters of deepwater and extension of 765 meters;

✓Also, will have the Port of Ilheus / Aritaguá (BA) at the end of the futures FIOLE and FICO Rails, near the present railroad FCA and the major international airport cargo. Already with environmental release, it should start in Aug./2013 on the form of PPP - Public-Private Partnership. It will be 3.5 km from the beach and will have up to 19 meters draft (deep) for vessels up to 400 thousand tons (minerals, containers, general cargo, sugar, ethanol, grains). Recent it reached an agreement with three Chinese steelmakers to invest locally;

✓In environmental release phase, we have the Port of Espadarte / Curuçá (AP). It is a river port in the state of Pará and 100 km from the Belém City. It shortens 400 km journey between the iron mines of the Carajás (PA) and the giant ships, even doubling the extraction / export of the VALE. Recent VALE purchased 3.000 hectares at this site. Also is in project phase the future offshore chemical-mineral Port the President Kennedy (ES);

✓Betting on the new FNS – North/South Railroad and on large and continued increase of grains productions the VALE to deploy a giant grain terminal (TEGRAM) at the port of Itaqui / São Luiz to 15.0 million tonnes in 2020 (equal to 8.5% of total harvest 2012/13 expected to a record of 180.0 million tons.). The current local capacity is only 2.5 million t. The Itaqui is originally a port for iron ore.



**THE AGROVISION BUSINESS CONSULTING** - Government, Diplomatic, Companies, Environmental Advising and Audits; Laws; Taxation; Finance; Establishment and Implementation of Holding; Due Dilligences; Business Plan; F&AS; Competitive Intelligence Plans, Selection, Implemen tation and Monitoring of Direct Investments, external or internal, in Partnership in Agribusiness, Mining, Forestry, Energy, Biofuels, Construction and Infrastructure; SRDP/SSDP/ICDP. (Brasilia-BRAZIL)

# THANK YOU

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**December 2012**

(Your entire disposal for prospecting, select, define, implement and audit the investments and business really more profitable, with faster returns and low risks for the Project, Activity, Location and Final Destination).

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**Notice: Due to the many different and complex variables involved, buying or investing direct or in partnerships in rural real estate, in urban real estate, companies, agro-industries, buildings etc. in Brazil, very profitable and really safe forms, is not as simple as many claim, especially abroad. The Brazil is a continental young country, tropical, of many races and many different locations, soils, climates, topographies, logistics, states and local taxes, laws, consumers and consumption patterns, cultures and people etc.. It is necessary good diagnostics, good "Business Plan" and mainly optimal local analyzes for highly skilled professionals (not theoretical and not only in offices), involving the making of "due diligence" serious, sensitive and detailed with about 20 different variables for each case. Recent, many have tried differently, but after the closed businesses and even paid disliked anything of purchases and partnerships made, especially about the possible future results.**

**Legal Note: Except own data, reports and other data used in this study were accessed, fully and freely, by the internet, or in the form of public data fully accessible for all, according to existing international laws.**