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A Special Management Report From

***Ag Equipment  
Intelligence***

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**Agriculture & the  
Farm Equipment  
Market  
in  
South  
America**



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# PART I: South America's Rising Ag Tide

## Challenging U.S. Growers

During the last year, no other economy worldwide has outshined that of South America, and Brazil and Argentina have emerged as the brightest of the shining stars. Experts agree: the economic impact of these countries is not to be taken lightly, thanks in large part to an ever-expanding agricultural base, and the significant role the industry now plays in establishing the region as a global player.

In its July 29, 2010 edition, the *Wall Street Journal* called South America “an ace in the hole” for U.S. companies during the second quarter.

*WSJ* business writer Bob Tita describes the recent performance of the South American economy as

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***“Nowhere in the world has had the dramatic change in the middle class like Brazil — not even China...”***

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stellar, to say the least. “With the U.S. and European economies recovering in fits and starts and companies’ beachheads in China providing more potential than profits at this point, robust demand from Brazil, Argentina and other countries in South America has bailed out companies that would have otherwise fallen short of expectations.

“Exports of mined minerals and agricultural commodities, along with burgeoning middle-class consumerism, are fueling gross domestic product growth, especially in Brazil, that rivals China’s. On top of that, the political instability, hyperinflation and crippling government debt that used to make South America risky for U.S. companies are largely in check these days,” Tita writes.

In that same report, Nicholas Heymann, an analyst for Sterne Agee & Leach, adds, “There’s nowhere else in the world that’s had the dramatic

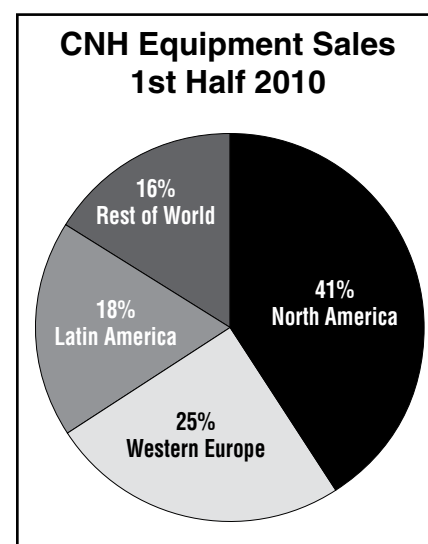
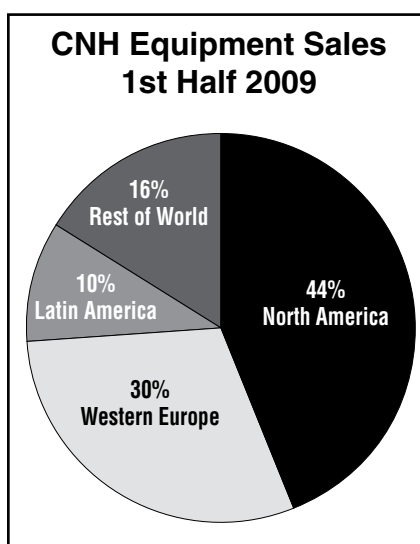
change in the middle class like Brazil, not even China. You’ve got an unfathomable amount of money there.”

The vibrant Brazil and Argentine economies and rising tide of agriculture have not been lost on the major and specialty farm equipment makers. Thanks in part to low-interest loans for farmers from the Brazilian government and

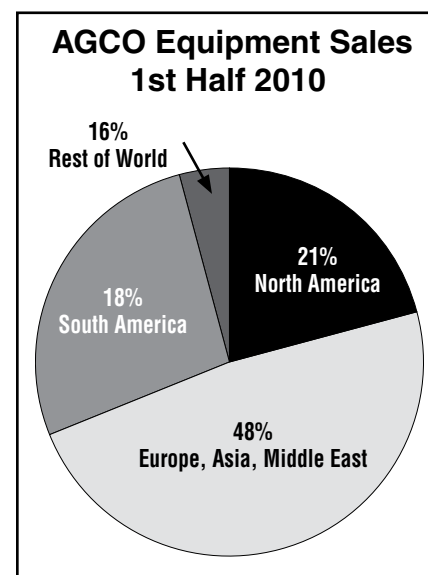
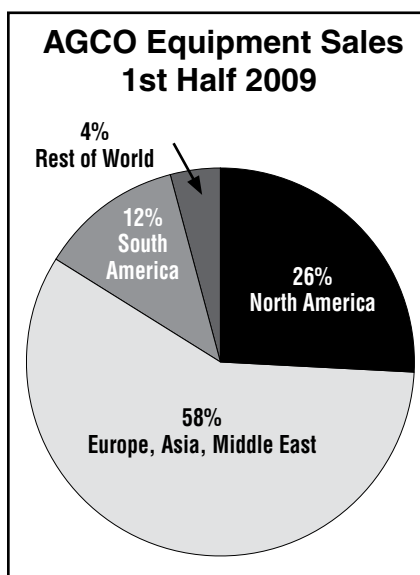
strong export demand for farm commodities, production and sales of farm machinery in Brazil are projected to rise 50% this year compared with 2009.

### Recent Performance

In the second quarter of 2010, each of the world’s three biggest manufacturers of ag equipment registered

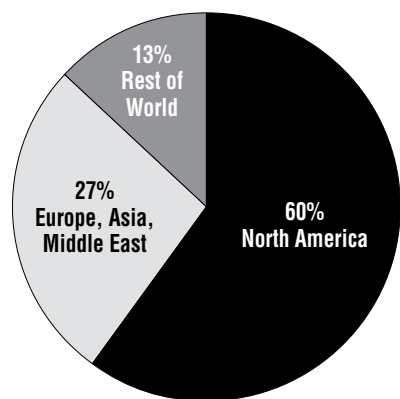


A comparison of the geographical distribution of CNH’s net sales in first half of 2009 (\$6.6 billion) and first half of 2010 (\$7.2 billion) demonstrates a significant jump in equipment sales in its Latin American Region, a majority of which is in Brazil and Argentina. CNH segmental net sales split in the first half of both 2009 and 2010 was approximately 80% agricultural equipment and 20% construction equipment.



AGCO’s farm equipment sales in Brazil climbed 50% during the first half of 2010 compared with the same period a year earlier, or by more than 70% excluding currency translation.

### John Deere Equipment Sales 1st Half 2010



John Deere's sales split in the first half of 2010 is estimated to have been 60% from North America, 27% Europe/Asia/Middle East, and 13% rest of world including South America.

dramatically higher revenues from South American sales of ag machinery. They're also confident that this trend will maintain its present course into the foreseeable future.

During the period, CNH saw its consolidated equipment revenue climb 11% from the same period a year ago, with Latin American sales in the quarter climbing 85%. At the same time, North American sales rose 11%, and equipment revenues in Western Europe slipped 13% year-over-year. "Strong commodity prices and the continuation of government support programs drove demand in Latin America, where tractor sales rose 39% and combines were up 41%," CNH said in its most recent earnings report.

Specifically, CNH tractor sales in Brazil rose 55% and increased in Argentina by 67%. Brazilian combine sales for the period grew 26%, and in Argentina they rose 34%.

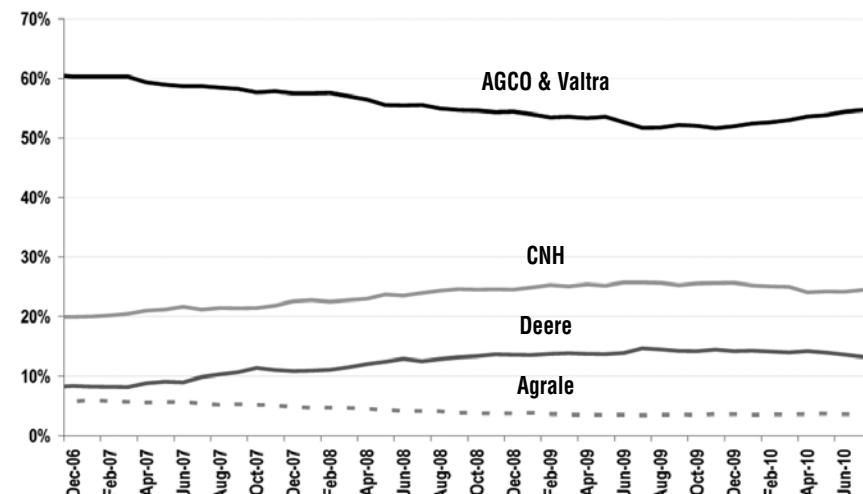
Overall, CNH's outlook for the remainder of the year calls for Latin American sales of farm equipment to increase 25-30%.

Likewise, John Deere sees continuing strong signals from its South American operations. In its second-

quarter earnings release, the company reported that South American industry sales were projected to increase by 25%, due mainly to improvement in the key Brazilian and Argentine

markets. Conditions in Brazil are receiving support from favorable prices for soybeans and sugarcane and from attractive government-supported financing, according to Deere.

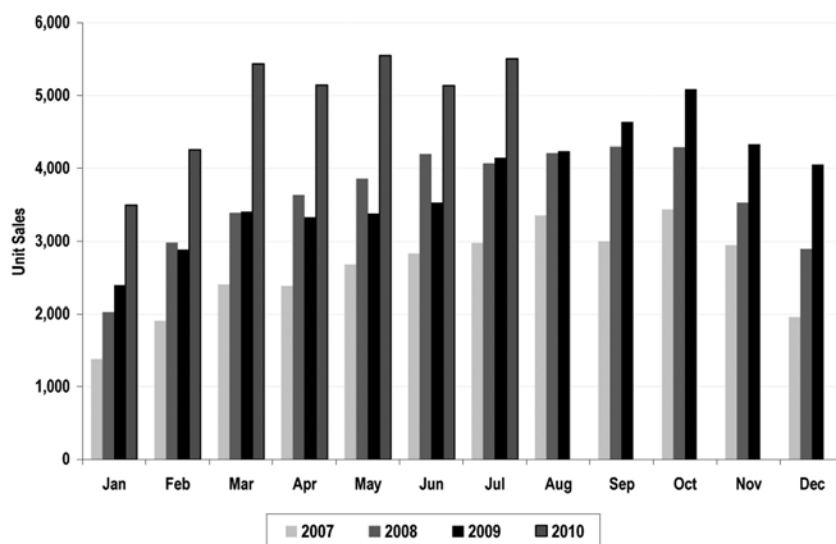
### Brazilian Tractors Trailing 12-Month Market Share



Source: ANFAVEA, JP Morgan

**AGCO has been the dominant player in Brazilian sales of farm tractors for the past decade or more with a market share ranging from 50-60%.**

### Brazilian Unit Tractor Sales — 2007-10



Source: ANFAVEA, JP Morgan

**Total tractor unit sales were up 33% year-over-year in July 2010 compared with July 2009. AGCO's unit sales were up 46%; CNH was up 47%, Deere was down 4%.**

The farm economy in Argentina is benefiting from commodity prices and a return to more normal weather conditions.

But it was AGCO, the world's third largest manufacturer of farm machinery, that appears to have profited most from the region's government policies and favorable trends in agriculture during the first half of the year.

With its Massey Ferguson and Valtra brands, AGCO has held a dominant position in tractor sales in the subcontinent for the past two decades. Through the first 6 months of the year, AGCO sales of ag machinery rose by 71% and 74% during the

### Argentina's Political Environment Hinders Export Growth

While economic and political reforms undertaken by Argentina and Brazil in the early and mid-1990s provided the impetus for their surge in agricultural output, Argentine officials continue to use the industry for political leverage. Since 2006, the government there has limited exports of beef, corn and wheat to provide cheaper food to the domestic market, thus limiting the industry's ability to expand.

Critics there have complained about the unorthodox price controls the government has used to squelch inflation. At one point, it banned most beef exports for 6 months, hoping to keep enough red meat at home to ensure high supplies and low prices for this key component of the consumer price index. More recently it imposed new taxes on soybean exports to finance subsidies of bread and other foodstuffs.

According to published reports, earlier this year corn growers met with officials of the national agricultural exports control office, known as ONCCA (Oficina Nacional de Control Comercial Agropecuario), in Buenos Aires to argue that the government should ease restrictions on exports, since domestic demand of 8 million tons would be met.

Corn exports require ONCCA permits, as do soybeans, wheat, sunflowers and certain other agricultural products.

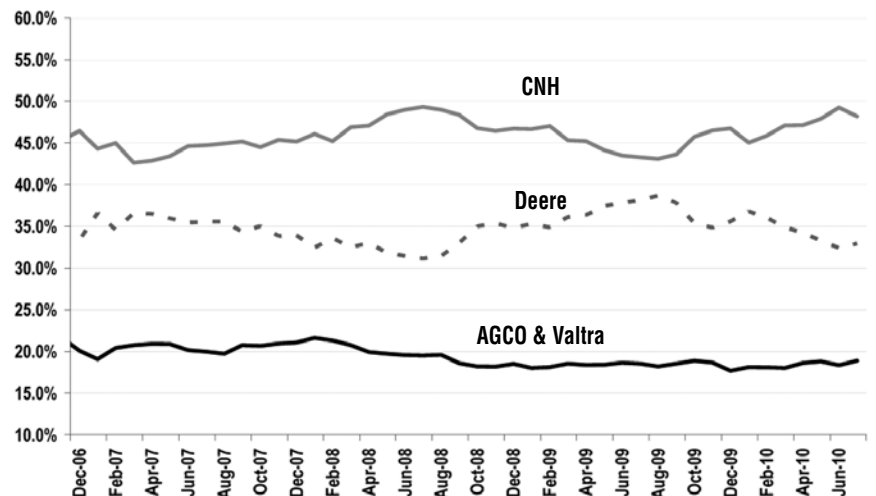
second quarter (excluding currency translation).

The company's outlook calls for a 20-25% improvement in South American farm equipment sales

through the remainder of the year.

Both Deere and Case IH built new facilities or expanded existing manufacturing plants in Brazil during the past year.

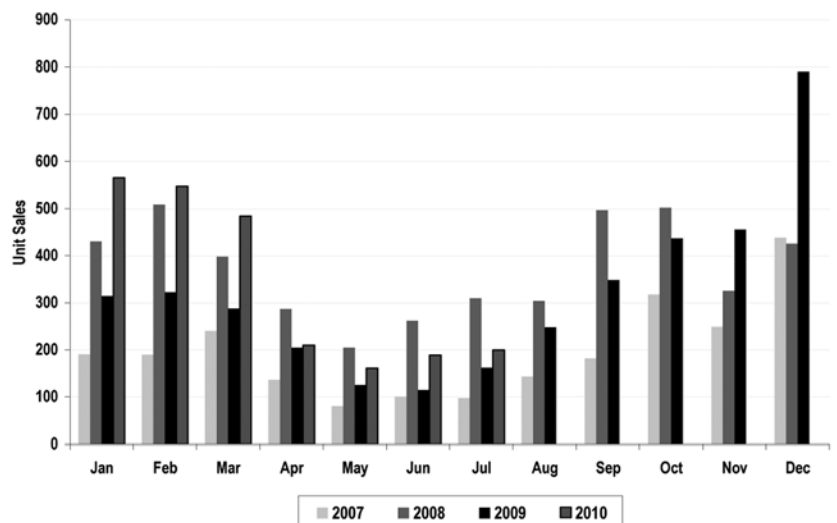
### Brazilian Combines Trailing 12-Month Market Share



Source: ANFAVEA, JP Morgan

**CNH currently claims nearly half of the market for combine sales in Brazil. Deere's market share ranged 35-40% between 2006 and mid-2010.**

### Brazilian Unit Combine Sales — 2007-10



Source: ANFAVEA, JP Morgan

**Combine industry unit sales were up 23% year-over-year in July. AGCO's combine unit sales were up 111%, vs. CNH down 34%. Deere's sales were up 79% year-over-year.**



## PART II:

# Growing Ag Production & Exports

The U.S. has been the world's leading exporter of corn and soybeans for 5 decades, but Argentina and Brazil have made significant inroads in the past 20 years.

Brazil has also emerged as a major player in the production and export of wheat, cotton and meat.

According to the Economic Research Service (ERS) of USDA, since 1990, "Argentina and Brazil have sharply increased agricultural output and have gained global market share for several major commodities, particularly soybeans, often at the expense

of the United States."

Between 1997 and 2007, soybean production has more than doubled in Argentina and Brazil. Argentina's wheat and corn production is up 75% and 105%, and Brazil's corn production has increased by more than 40%.

In contrast, soybean and corn production in the U.S. has expanded by about 42% and 25% during the same period.

ERS also reports that soybean production in Argentina and Brazil has expanded faster than the countries' domestic use, contributing to rising exports and growth in global market share. In the 1990s, Brazil was a net importer of corn. Today, the country has become one of the world's largest corn producers and exporters.

In their "2010 Outlook for U.S. and World Corn and Soybean Industries, 2009-2019," issued in July 2010, agricultural economists Richard

Taylor and Won Koo of North Dakota State Univ., say world corn trade will increase 13% over the coming decade, with U.S. exports remaining steady while Brazil and Argentine exports expand rapidly.

At the same time, world soybean trade will increase 66% with China

***"By 2012, Brazil will overtake the U.S. in soybean exports and the U.S. will shift to third place behind Argentina sometime shortly after 2020..."***

buying increasingly larger amounts. U.S. bean exports will also remain flat, while the larger demand will be

*Continued on page 8*

### World's Largest Cotton Producers & Exporters

#### Cotton Producers (est. 000s of bales)

1. China	25,500
2. United States	17,559
3. India	12,500
4. Pakistan	8,350
5. Brazil	4,400

#### Cotton Exporters (est. 000s of bales)

1. United States	12,000
2. Australia	1,700
3. Brazil	1,300

*Source: USDA and nationmaster.com*

**Brazil also is a global player in terms of cotton output. It's now the fifth largest producer of cotton and the third largest exporter of cotton.**

### Global Corn Production (metric tons)

	2006-07	2007-08	2008-09	2009-10	June 2010-11 (f)
U.S.	267,503	331,177	307,142	333,011	339,614
China	151,600	152,300	165,900	155,000	166,000
EU-27	53,829	47,555	62,321	55,773	56,717
Brazil	51,000	58,600	51,000	53,000	51,000
Mexico	22,350	23,600	24,226	21,300	24,000
Argentina	22,500	22,017	15,000	22,500	21,000

*Source: USDA*

**Brazil ranks fourth worldwide in terms of corn production (third if EU-27 rankings are not consolidated). Argentina ranks sixth in total corn production. (f = forecast)**

### World's Largest Producers of Meat (est. 000s of metric tons)

1. China	53,747
2. United States	35,085
3. Brazil	12,184

*Source: USDA nationmaster.com*

**In addition to traditional beef products, pork and poultry are gaining importance in Brazil. In terms of meat production, Brazil now ranks third worldwide, behind China and the U.S.**

### Global Soybean Production (metric tons)

	2006-07	2007-08	2008-09	2009-10(f)	June 2010-11(f)
U.S.	87,001	72,859	80,749	91,417	90,083
Brazil	59,000	61,000	57,800	69,000	6,5000
Argentina	48,800	46,200	32,000	54,500	5,0000
China	15,967	14,000	15,540	14,700	1,4600
India	7,690	9,470	9,100	8,750	8,800
Paraguay	5,856	6,900	4,000	7,200	6,500
Canada	3,466	2,696	3,336	3,500	3,650
Other	9,346	7,881	9,439	10,635	11,301
<b>Total</b>	<b>237,126</b>	<b>221,006</b>	<b>423,928</b>	<b>259,702</b>	<b>249,934</b>

*Source: USDA*

**Following the United States, Brazil is the second largest producer of soybeans worldwide and Argentina ranks third. (f = forecast)**

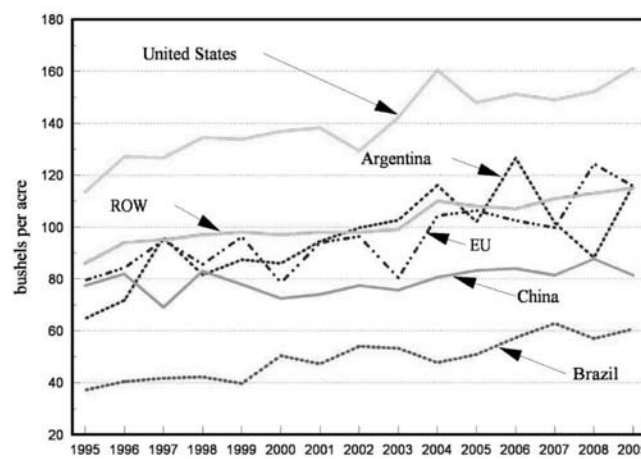
### Countries with Largest Estimated Area Planted to Corn (hectares)

1.	United States:	28,710,000
2.	China:	24,070,000
3.	Brazil:	12,440,000
4.	Mexico:	7,690,000
5.	India:	7,420,000
6.	South Africa:	3,300,000
7.	Indonesia:	3,200,000
8.	Romania:	2,700,000
9.	Philippines:	2,490,000
10.	Argentina:	2,300,000

Source: EAS, USDA

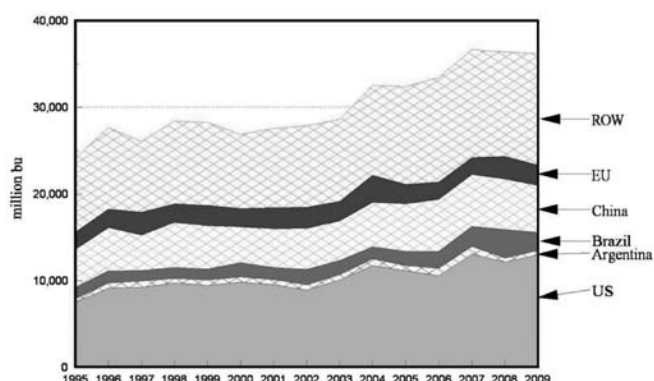
**Brazil ranks third in terms of land planted to corn, while Argentina ranks tenth.**

### World Corn Yields — 1995-2009



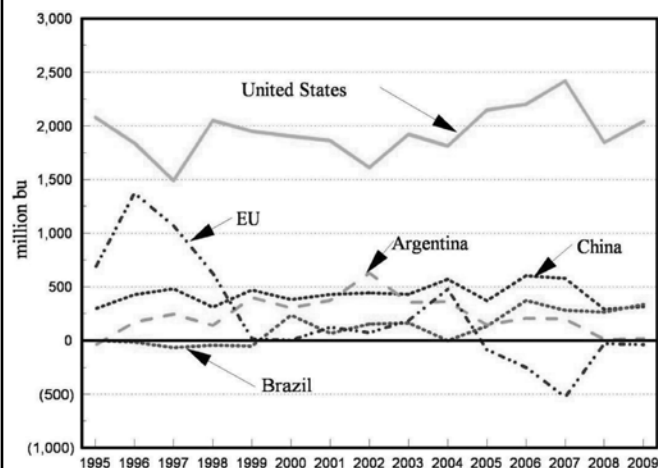
**World average corn yields increased 34% between 1995-09. U.S. yields increased 42%. Chinese yields rose 5%, EU and Brazil yields increased 63% and 46%, respectively. (Taylor & Koo)**

### World Corn Production — 1995-2009



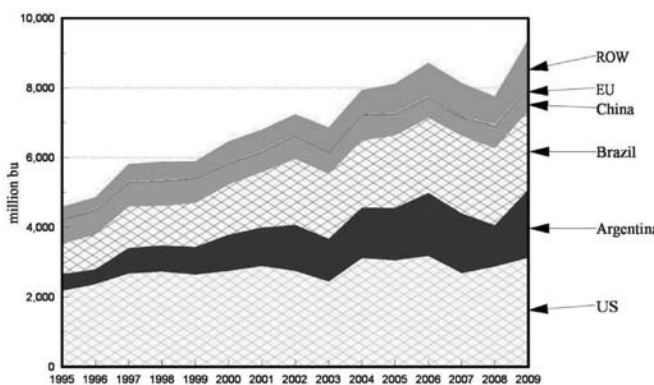
**U.S. corn production grew by 55% between 1995-09. China's production increased 24% while Brazil and the EU increased production 60% and 18%, respectively. (Taylor & Koo)**

### World Corn Exports — 1995-2009



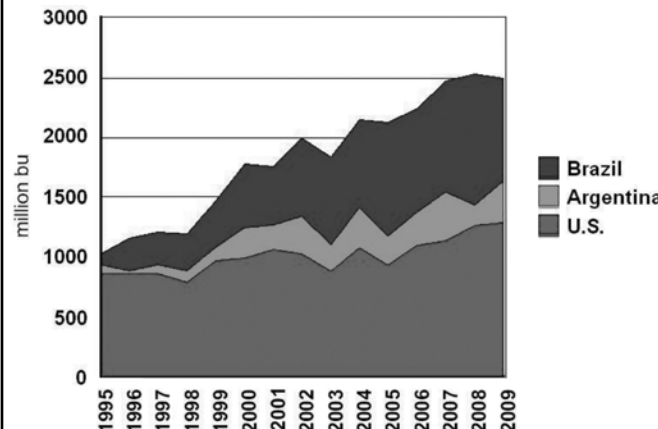
**Since 1995, U.S. corn exports remained at about 2 billion bushels per year. The rest of world increased imports from less than 1 billion bushels in '95 to 2.7 billion bushels in 2009. (Taylor & Koo)**

### World Soybean Production — 1995-2009



**World soybean production increased 106% between 1995 and 2009. Argentina and Brazil increased their soybean production 320% and 150%, respectively. (Taylor & Koo)**

### World Soybean Exports — 1995-2009



**The U.S., Brazil and Argentina export over 90% of the world's soybeans. China imports almost 60% of the world's exportable supplies of soybeans. (Taylor & Koo)**

Continued from page 6

supplied from South America.

U.S. corn and soybean exports will only increase about 1.5% each, while Argentina will expand soybean exports by over 300% and Brazil by 83%, according to Taylor and Koo. Brazilian corn exports will expand by 62% and Argentine exports by

40%. By 2019, China will be importing 1.1 billion bushels of corn and 2.2 billion bushels of soybeans. By 2012, Brazil will overtake the U.S. in soybean exports and the U.S. will shift to third place behind Argentina sometime shortly after 2020.

The NDSU economists project

that during the next decade, world corn production will grow from 48 billion bushels to 53 billion bushels. They say that U.S. production will rise by 12% and Argentina will increase its corn output by 10%.

While Chinese corn production is expected to grow 9% to 6.1 billion

### 15 Largest Soybean Producing Countries — 2009

(Marketing year - thousands of hectares, tons per hectare, and thousands of metric tons)

Rank	Country	Area Harvested	Yield	Production	Exports	Total Domestic Consumption
1	United States	30,921		91,472	38,102	51,634
2	Brazil	23,100		66,000	25,300	34,550
3	Argentina	18,800		53,000	7,850	36,936
4	China	8,800		14,500	500	55,460
5	India	9,600		8,800	5	8,800
6	Paraguay	2,800		7,100	5,300	1,680
7	Canada	1,380		3,500	2,000	1,830
8	Bolivia	900		1,665	130	1,545
9	Uruguay	800		1,600	1,550	40
10	Ukraine	625		1,050	430	605
11	EU-27	370		990	30	13,770
12	Russia	792		942	5	1,880
13	Indonesia	620		800		2,338
14	South Africa	225		470	100	395
15	Nigeria	440		450		454
World		101,798		255,017	81,389	235,114
Top 15 As % Of World		98%	NM	99%	100%	90%

Source: USDA

World soybean yields increased 23% in the last 15 years. U.S., Brazil and Argentina increased yields from 32-35 bushels per acre in 1995 to 40-45 bushels in 2009.

### 15 Largest Soybean Importing Countries 2009

(Marketing year - thousands of metric tons)

Rank	Country	Imports
1	China	42,500
2	EU-27	13,000
3	Japan	3,950
4	Mexico	3,500
5	Taiwan	2,250
6	Thailand	1,705
7	Indonesia	1,600
8	Egypt	1,500
9	Turkey	1,280
10	South Korea	1,200
11	Iran	1,070
12	Russia	950
13	Malaysia	558
14	Syria	525
15	Israel	450
World		79,575
Top 15 As % Of World		96%

Source: USDA

China's demand for soybeans is approaching one-half of total imports by the top-15 purchasing countries.

### 15 Largest Corn Producing Countries — 2009

(Marketing year - thousands of hectares, tons per hectare, and thousands of metric tons)

Rank	Country	Area Harvested	Yield	Production	Exports	Total Domestic Consumption
1	United States	32,225	10.4	334,052	50,802	282,334
2	China	30,000	5.2	155,000	500	159,000
3	EU-27	8,389	6.7	55,766	1,500	60,000
4	Brazil	13,300	3.8	51,000	9,000	45,500
5	Mexico	6,300	3.5	22,000	50	32,200
6	India	8,400	2.2	18,500	1,000	17,500
7	Argentina	2,150	8.0	17,200	9,500	7,100
8	South Africa	3,100	3.7	11,500	1,500	10,200
9	Ukraine	2,100	5.0	10,500	5,000	5,650
10	Canada	1,400	6.8	9,560	300	11,800
11	Indonesia	3,250	2.8	9,000	100	9,100
12	Nigeria	4,900	1.7	8,300	100	8,400
13	Philippines	2,655	2.6	6,850		7,400
14	Serbia	1,200	5.3	6,400	2,000	4,500
15	Egypt	735	8.6	6,300		10,900
World		155,271	5.1	797,831	84,787	807,433
Top 15 As % Of World		77%	NM	90%	96%	83%

Source: USDA

Only China rivals the U.S. dominance in producing corn, but Brazil and Argentina have moved up on the list and now rank fourth and seventh, respectively.

### 15 Largest Corn Importing Countries — 2009

(Marketing year - thousands of metric tons)

Rank	Country	Imports
1	Japan	16,300
2	Mexico	9,500
3	South Korea	7,500
4	Taiwan	4,600
5	Egypt	4,200
6	Colombia	3,300
7	Iran	2,900
8	Malaysia	2,600
9	EU-27	2,500
10	Algeria	2,100
11	Canada	2,000
12	Syria	1,900
13	Saudi Arabia	1,800
14	Morocco	1,600
15	Peru	1,500
World		82,549
Top 15 As % Of World		78%

Source: USDA

The top 15 importers of corn purchased 78% of corn traded worldwide in 2009. The U.S. is dominant when it comes to corn exports.



bushels by 2019, it will not be enough to satisfy the country's needs.

Taylor and Koo forecast that U.S. corn production will decline slightly through 2014, and then resume its upward climb. By 2019, U.S. corn production will be just over 14 billion bushels and U.S. soybean production

will be 3.4 billion bushels.

While Argentina will increase its soybean production by nearly 60% in the coming decade, it will still only be about 70% of what the U.S. will produce. During the same period, Brazilian production of soybeans will remain at about 90% of that of U.S.

producers, say Taylor and Koo.

Simply put, higher exports of agricultural commodities from South America will, in all likelihood, erode exports from the U.S. This will ultimately have a significant impact on the sale of farm machinery on both continents.

### 15 Largest Cotton Producing Countries — 2009

(Marketing year - thousands of hectares, kilograms per hectare, and thousands of 480-lb bales)

Rank	Country	Area Harvested	Yield	Production	Exports	Total Domestic Consumption
1	China	5,250	1,327	32,000	75	45,000
2	India	10,260	499	23,500	5,700	19,200
3	United States	3,112	868	12,401	12,000	3,442
4	Pakistan	3,000	711	9,800	500	12,025
5	Brazil	820	1,474	5,550	2,000	4,050
6	Uzbekistan	1,300	737	4,400	4,000	1,000
7	Australia	195	1,954	1,750	1,700	(35)
8	Turkey	280	1,322	1,700	125	5,100
9	Turkmenistan	550	435	1,100	1,000	440
10	Syria	180	1,179	975	200	850
11	Greece	200	980	900	875	225
12	Burkina	450	423	875	850	4
13	Argentina	435	425	850	50	784
14	Zimbabwe	380	264	460	375	105
15	Egypt	117	837	450	75	888
World		30,461	734	102,743	33,772	113,074
Top 15 As % Of World		87%	NM	94%	87%	82%

Source: USDA

**Brazil now ranks as the fifth largest cotton producer worldwide. Argentina also makes the list at number 13.**

### 15 Largest Cotton Importing Countries 2009

(Marketing year - 480-lb bales)

Rank	Country	Imports
1	China	9,000
2	Bangladesh	4,000
3	Turkey	3,300
4	Pakistan	2,750
5	Indonesia	2,075
6	Thailand	1,800
7	Mexico	1,500
8	Vietnam	1,350
9	South Korea	1,000
10	Taiwan	825
11	Russia	675
12	India	600
13	Egypt	400
14	Iran	325
15	Peru	300
World		33,761
Top 15 As % Of World		89%

Source: USDA

**In total, the top 15 importers of cotton required 96% of all cotton traded worldwide, which came to 79,575 metric tons.**

### 15 Largest Wheat Producing Countries 2009

(Marketing year - thousands of hectares, tons per hectare, and thousands of metric tons)

Rank	Country	Area Harvested	Yield	Production	Exports	Total Domestic Consumption
1	EU-27	25,458	5.4	138,218	19,000	127,000
2	China	24,000	4.8	114,500	1,000	102,000
3	India	27,800	2.9	80,580	50	76,120
4	Russia	28,700	2.2	61,700	18,000	41,200
5	United States	20,181	3.0	60,314	22,453	32,168
6	Canada	9,500	2.8	26,500	18,500	8,100
7	Pakistan	9,000	2.7	24,000	500	23,300
8	Australia	13,800	1.6	22,500	15,000	7,100
9	Ukraine	6,750	3.1	20,900	9,000	12,100
10	Turkey	8,670	2.1	17,800	2,600	17,400
11	Kazakhstan	14,700	1.2	17,000	7,500	7,550
12	Iran	6,000	2.0	12,000	50	16,200
13	Argentina	3,000	3.0	9,000	3,500	4,980
14	Egypt	1,220	6.5	7,900	10	17,050
15	Morocco	2,800	2.3	6,370	100	7,650
World		225,776	3.0	677,441	123,802	644,366
Top 15 As % Of World		89%	NM	91%	95%	78%

Source: USDA

**Brazil is not a major producer of wheat, but Argentina ranks as the 13th largest wheat producer worldwide.**

### 15 Largest Wheat Importing Countries 2009

(Marketing year - thousands of metric tons)

Rank	Country	Imports
1	Egypt	8,800
2	EU-27	6,500
3	Brazil	6,500
4	Indonesia	5,500
5	Algeria	5,300
6	Japan	5,300
7	Iran	4,500
8	Iraq	3,800
9	South Korea	3,700
10	Nigeria	3,500
11	United States	3,130
12	Mexico	3,100
13	Philippines	3,000
14	Bangladesh	2,600
15	Turkey	2,500
World		122,570
Top 15 As % of World		55%

Source: USDA

**The 15 largest wheat importing countries accounted for 55% of total wheat imports in 2009. In total, this group purchased 122,570,000 metric tons.**

## Brazil: Room to Keep Growing

Near the end of Argentina's 2010 corn harvest in July, the Buenos Aires Cereals Exchange projected that the country's corn harvest could exceed 16.5 million tons. The previous week it estimated production of 15.8 million tons.

At the same time in Brazil, the

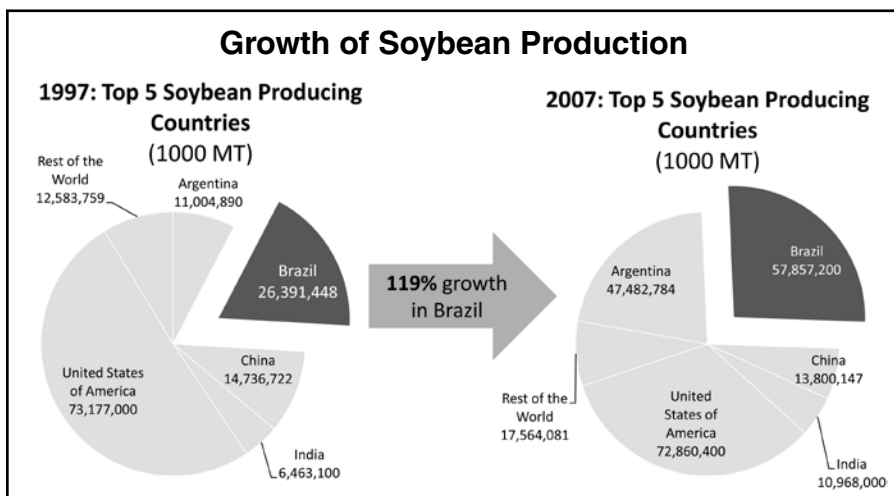
Agriculture Ministry increased its outlook for the 2010 corn crop to 50.5 million tons from a December estimate of 50.2 million tons. Production will decline slightly from 51 million tons produced last year.

In addition to its record-high corn production levels, Argentine farmers are also gaining when it comes to soybean

yields, which in 2010 were likely to be the best ever. After averaging around 6.6 tons per hectare during the previous 5 years, 2009 yields reached nearly 8 tons per hectare, according to the Ministry of Agriculture in Buenos Aires.

In addition to improving crop yields, Brazil, and to a lesser extent Argentina, still has tremendous potential to expand area devoted to agricultural production.

According to ERS, "Agriculture in Brazil and Argentina: Developments and Prospects for Major Field Crops," Brazil has the world's largest remaining tract of virgin land — an estimated 547 million hectares remain as virgin scrubland or rainforest. As much as



One of the major reasons Brazil has been able to increase soybean production in the past decade is because it has been able to develop new acres for agriculture. (Source: Deere & Co.)

***"In addition to improving crop yields, Brazil, and to a lesser extent Argentina, has tremendous potential to expand area devoted to agricultural production...."***

## Countries with the Greatest Amount of Arable Land — 2007

(thousands of hectares)

Rank	Country	Land Area	Arable Land	% Arable
1	United States	916,192	170,428	19%
2	India	297,319	158,650	53%
3	China	932,749	140,630	15%
4	Russia	1,637,774	121,574	7%
5	Brazil	845,942	59,500	7%
6	Canada	909,351	45,100	5%
7	Australia	768,230	44,180	6%
8	Nigeria	91,077	36,500	40%
9	Argentina	273,669	32,500	12%
10	Ukraine	57,933	32,434	56%
11	Mexico	194,395	24,500	13%
12	Kazakhstan	269,970	22,700	8%
13	Indonesia	181,157	22,000	12%
14	Turkey	76,963	21,929	28%
15	Pakistan	77,088	21,500	28%
WORLD		13,009,115	1,411,117	11%
TOP 15 AS % OF WORLD		58%	68%	

(8) Source: United Nations Food & Agriculture Organization

In terms of total acres of arable land, Brazil ranks fifth and Argentina ninth, but Brazil has the greatest potential to add new acres for agriculture.

one-fourth of this land is *cerrado* — a savanna-like flatland readily convertible to agricultural activity. In addition, both Argentina and Brazil have huge areas under permanent pasture — an estimated 142.5 and 185 million hectares, respectively — that support "grass-fed" cattle industries. Part of this pasture land could be converted to grain and oilseed production under the right market signals.

Despite this purported potential for expanding its agricultural lands, Brazilian producers have come under increasing pressure and environmental scrutiny when it comes to expanding into the rainforests. For all practical purposes, the overall acreage available for expansion probably isn't nearly as large as projected.

Nonetheless, it is still remains significant in comparison to U.S. agriculture's potential to expand agricultural acreage.

## Farming in Brazil: One Grower's Perspective

Marcelo Arruda, who runs a 1,000-hectare farm in Brazil, has witnessed first-hand the changes that have swept the country's agricultural landscape in the last decade.

With labor costs still relatively low, farmers like Arruda depend on employed workers to run their farms. Arruda, who grows soybeans, corn, oranges, coffee and sod, has as many as 80 workers helping out, depending on the time of year.

This explains why farmers in Brazil are keenly focused on the latest farming technologies and equipment. Arruda, who attended the Farm Progress Show in 2008 and again in 2010, says he's always looking to automate. Increasing living standards and global competition continue to drive the need for greater efficiencies and yields.

Arruda finds that what works for growers in the U.S. may or may not meet the very specific and vastly different requirements of Brazilian farmers. In the tropical zones in particular, soils are quickly depleted of nutrients, and pests are an ongoing battle.

### What's Working

To retain soil nutrients, no-till caught on in the 1990s and today enjoys a very strong following in Brazil. In fact, more than half of grain farmers in Brazil today practice some type of no-till farming, according to a recent article in *The Economist*.

Because some soils are very calcium-deficient, additional treatments of products like gypsum and limestone have worked well to balance the acidity in the soils. And by adapting both seeds and plants to the highly acidic soils in the dry tropical climate of the cerrado (Brazil's savannah) farmers in this region can now use genetically modified short-cycle soybean seeds to grow two crops annually.

In fact, while many believe that Brazil has been clearing the Amazon rainforest for farming, most of Brazil's newly added farmland has been in the cerrado, thanks to these new technologies and practices.

Today, roughly one-eighth of the country's farmland is actually being farmed, according to the USDA's Food and Agriculture Statistics Global Outlook (FAO). That leaves 350 million hectares of potential growth, or as much spare farmland as the next two countries combined — Russia and the U.S.

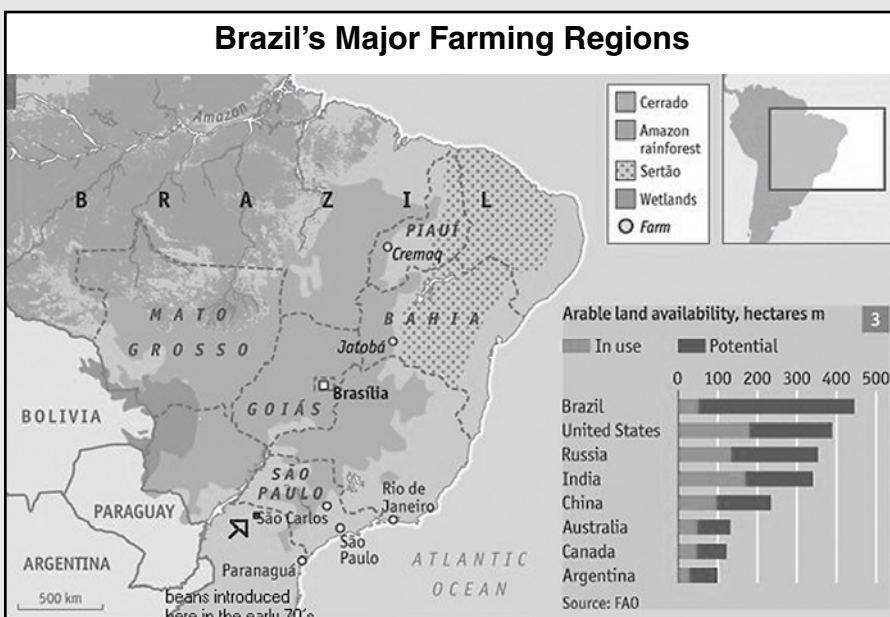
### Constraints to Growth

Arruda notes that conservation regulations have limited the growth of farming in Brazil. For example, the Amazon region in the northwest is almost completely off-limits to farming,

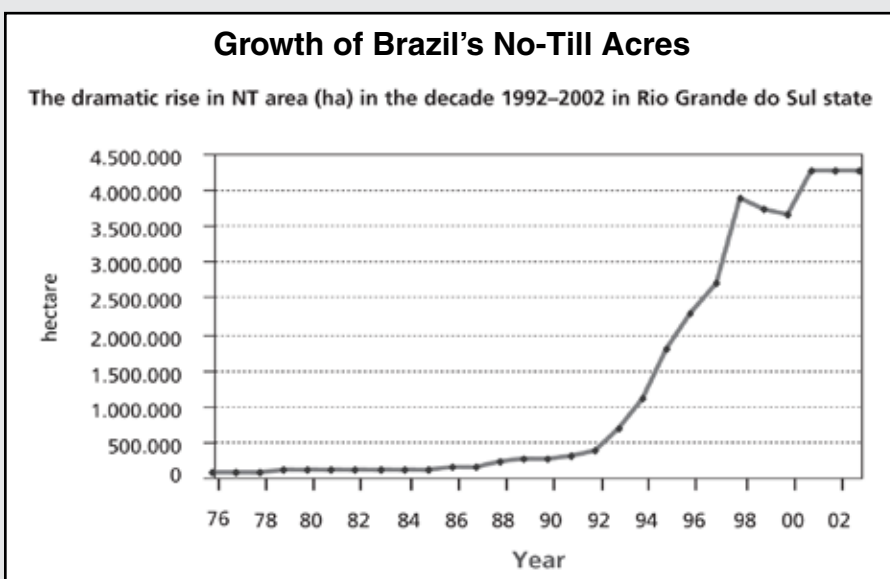
as is about half of Mato Grosso, Brazil's third largest state, and roughly 20% of Paraná, Brazil's largest corn region.

He adds that the country's aging infrastructure further limits farmers' ability to compete in the global commodities markets, due to the high costs of transporting grain from farm to port.

Despite these limitations, Arruda has seen an uptick in foreign investors snapping up vast tracts of farmland in Brazil. He anticipates that new government regulations aimed at the U.S. and China will likely restrict foreign ownership of farmland in the coming months.



Marcelo Arruda currently employs as many as 80 employees to work his 1,000-hectare farm in Brazil. The arrow on the map indicates the location of his farm.



To retain soil nutrients, no-till practices caught on in the 1990s and today more than half of grain farmers in Brazil practice some type of no-till farming.

The ERS report concludes that, “South American field crop output will clearly have an ongoing influence on U.S. farm exports, prices, incomes, budgetary outlays and program options.” And as agricultural powers, Brazil and Argentina also have become an increasingly important market for the manufacture and sale of farm equipment.

### Incentives for Brazilian Agriculture

The Brazilian government’s 2010-11 Agricultural Plan, which was announced in June, included a variety of very attractive incentives for its farmers.

According to a report by JP Morgan analyst Debbie Bobovnikova, financing for farmers under the Rural Credit program will rise to R\$116 billion from R\$108 billion starting on July 1. The Plan shows a growing focus on sustainability, medium-sized farmers, and storage improvements.

**Rural Credit Program.** Rural Credit is mandatory lending by the private and public banks to the agricultural sector in Brazil. The government sets the mandatory size and interest rates of loans while individual banks take on the associated balance sheet risk.

Each bank in Brazil must lend ~30% of its demand deposits. In addition, government banks such as Banco

do Brasil and Banco do Nordeste must lend ~70% of savings deposits as well at subsidized rates, though those rates are brought back to normal market rates through government equalization payments.

The banks are also required to diversify their loans among small and medium-sized farmers as well as co-ops.

Banks that do not fulfill their required lending program must either pay a fine to the Central Bank equivalent to 40% of the amount not lent

***“Rural Credit is mandatory lending by the private and public banks to the agricultural sector in Brazil. ...”***

(based on the July-June year) or have the remaining balance frozen at the Central Bank, interest-rate free, for 12 months. Rural Credit is typically ~1/3 of total agricultural financing in Brazil, with the balance coming from farmers’ profits as well as suppliers and trading companies.

The Rural Credit Program for the 2010-11 season is 8% higher year-over-year.

The single largest part of the package — R\$60.7 billion or 52% of the total, up 12% year-over-year — consists of subsidized loans to finance working capital needs. These loans come at a 6.75% interest rate, unchanged from the prior year and well below both market and risk-free rates in Brazil. There is also an additional R\$14.9 billion in working capital loans at prevailing market rates.

Bobovnikova reports that demand for these investment credit lines remains low, according to the banks, as farmers wait for better pricing perspectives to invest.

**Medium-Size Farms.** The program brings a new credit line of R\$5.65 billion dedicated to medium-sized farmers (annual gross revenues below R\$500,000).

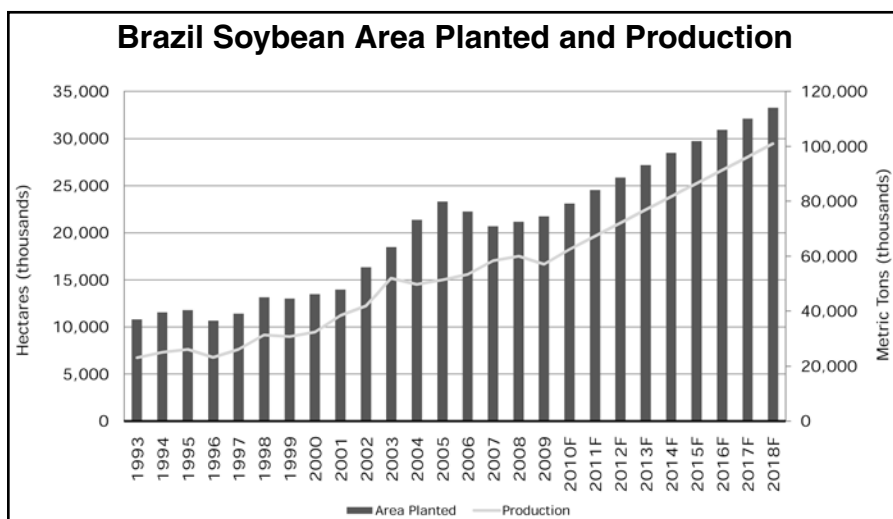
Each producer would be eligible for a credit line of R\$275,000 (up from R\$250,000 in the prior year) at a 6.25% interest rate.

Producers of high-cost crops will be allowed an exemption of maximum gross revenues as follows:

1. R\$625,000 gross revenue limit for growers of sugarcane, coffee, fruit, etc.
2. R\$833,000 gross revenue limit for farmers with non-integrated poultry or pork, dairy, floriculture and horticulture.
3. Up to R\$2,500 million gross revenue limit for farmers involved with integrated poultry or pork.

**Encouraging “Green” Practices.** R\$2 billion of funds were allocated this year to a new program for sustainable agriculture called ABC (Low-Carbon Agriculture).

The funds are to be used to recover environmentally damaged areas, increase the use of no-till as well as nitrogen fixation techniques, and increase the integration of forestry, cattle and grain farming. It also aims to increase commercial planted forest area to 9 million hectares by 2020 from 6 million hectares today. Applicants for these funds would be eligible for up to R\$1 million at 5.5% interest rate with a 12-year payback period.



Since 1993, Brazil has continuously increased the land planted to soybeans, from 11,000 to nearly 35,000 hectares forecasted for 2018.

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## PART III: Brazil and Argentina: Vibrant Markets for Ag Equipment

Brazil and Argentina generate the highest volume sales of agricultural equipment in South America, and it's no wonder. The Latin American powerhouses have experienced 4 consecutive quarters of positive economic growth, and their combined GDPs comprise 3% of the world's economy. Both countries have abundant natural resources, a well-educated population, an export-oriented agricultural sector and a relatively diversified industrial base.

In its *2010 Economic Report on Agricultural Machinery*, VDMA, the Agricultural Machinery Assn. based in Frankfurt, Germany, describes Brazil's agricultural machinery sector as "strong," employing 40,000 people. The three major equipment makers — John Deere, CNH and AGCO — all maintain an influential presence in Brazil. In fact, tractors and self-propelled agricultural machines are produced at 13 locations throughout the country.

In 2009, 55,000 tractors and 4,500

combines were manufactured in Brazil, a drop of 17% and 46% respectively from 2008 levels. Manufacturers keenly felt the weakness of global markets and in neighboring Argentina.

The domestic agricultural machinery market remained strong, however, thanks in part to Brazil's agricultural subsidy programs. These include the rural farm financing program, which offers farmers subsidized loans at interest rates ranging from 4.5% to 5.5%, and earlier programs designed to increase farm productivity by modernizing equipment fleets and expanding the rural infrastructure. (See sidebar below.)

In this context, sales of tractors in Brazil grew by 5% to 45,400 units in 2009. The combine market was unable to maintain the levels of the previous year and declined by 14% to 3,800 units.

In addition, several state-run manufacturing facilities in Brazil and Argentina produce a full range of

tractors and combines, along with specialty equipment and implements, such as planter/seeder and sprayers that are customized to local preferences and regional cultures not easily accessed by the multinationals.

Brazilian-based Agrale, for example, has served the market since 1962, and its nationally recognized brands continue to appeal to farmers throughout the region.

While industry sources claim that Agrale's market share has dropped from 6% in 2006 to 3.5% in 2008, the company continues to challenge the multinationals. Marketed under the Yanmar Agritech and Agritech brand names, Agrale tractors are designed to meet the needs of the Brazilian agricultural market and are known locally for their advantageous cost-benefit ratios.

Today, Agrale is one of several producers in South America to emerge as key players in the global agricultural economy. Agrale dates back to Agrisa, which built Agrisa-Bungartz tractors under license of the German-based Bungartz company. Later alliances included Deutz-Fahr, when the company produced Agrale-Deutz tractors and trucks. Agrale is now part of the Francisco Stedile Group, which also produces commercial vehicles, engines, off-road vehicles, bus chassis, motorcycles, and scooters.

Another dark horse in the race for market share in Brazil is Green Horse, which has surpassed Agrale in the under 49-horsepower tractor category in recent years, according to industry sources. Green Horse is the rebranded Jinma brand from China, and initially entered the market as an import. Industry sources believe that Green Horse is now planning a factory in Brazil.

### Boom Times in Brazil

Without question, Brazil is a country on the move. According to VDMA, "Brazil has developed into one

### Record Crops, Subsidies, Fuel Brazilian Equipment Sales

With the 2010 crop harvest now complete and at record levels, sales of farm machinery in Brazil are expected to continue an upward trend.

According to JP Morgan machinery analyst Ann Duignan, "We expect combine sales to remain seasonally low in July and August, but tractor sales to pick up as farmers make plans for the next growing season. Additionally, they are in the midst of a record sugarcane harvest. Furthermore, the government's announcement to extend rural farmer financing programs (to record levels) for 2010-11 will likely further bolster ag equipment spending."

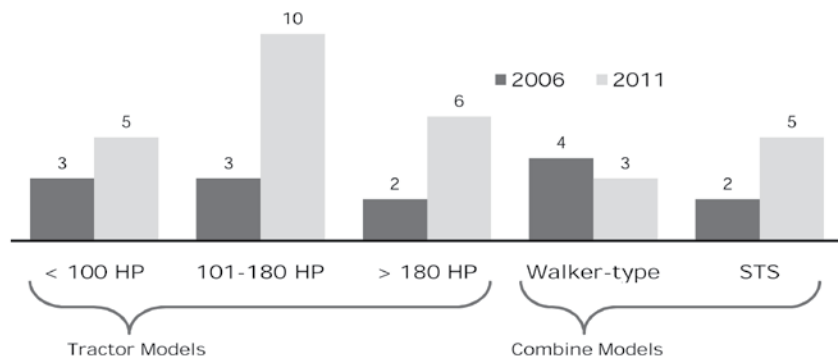
According to a recent JP Morgan report, the Brazilian government's 2010-11 Rural Credit program, which covers roughly one-third of the country's total farm financing needs, rose to R\$116 billion (\$65.9 billion) on July 1, up from R\$108 billion (\$61.4 billion). The program places additional emphasis on sustainability, medium-sized farmers and storage improvements.

The Rural Credit program is mandatory lending by the private and public banks to the agricultural sector in Brazil. The government sets the mandatory amount and interest rates of loans while individual banks take on the associated balance sheet risk. Each bank in Brazil must lend approximately 30% of its demand deposits. In addition, government banks such as Banco do Brasil and Banco do Nordeste must lend approximately 70% of savings deposits at the subsidized rates, though those rates are brought back to normal market rates through government equalization payments. The banks are also required to diversify their loans among small and medium sized farmers as well as cooperatives.

Banks that do not fulfill their required lending program must either pay a fine to the Central Bank (equivalent to 40% of the amount not lent based on the July/June growing season) or have the remaining balance frozen at the Central Bank, interest free, for 12 months.



## John Deere's South American Product Portfolio



**Responding to South America's broadening demand for advanced technology in farm equipment, John Deere has introduced 50 new or updated products into the market for 2010-11. (Source: Deere & Co.)**

of the leading emerging economies and a very confident nation."

The association also cites a significant discovery of offshore crude oil and Brazil's upcoming role in hosting the 2014 Soccer World Cup as key factors that have contributed to the country's emergence as a global economic player. According to the report, Brazil now ranks eighth among national economies, and the country's

economic prosperity depends heavily on agricultural products, which make up more than one-third of its total exports.

In terms of agricultural production, Brazil now ranks fifth in the availability of arable land and grain production, and third in terms of meat production. The country's most important agricultural products include corn, soybeans and cot-

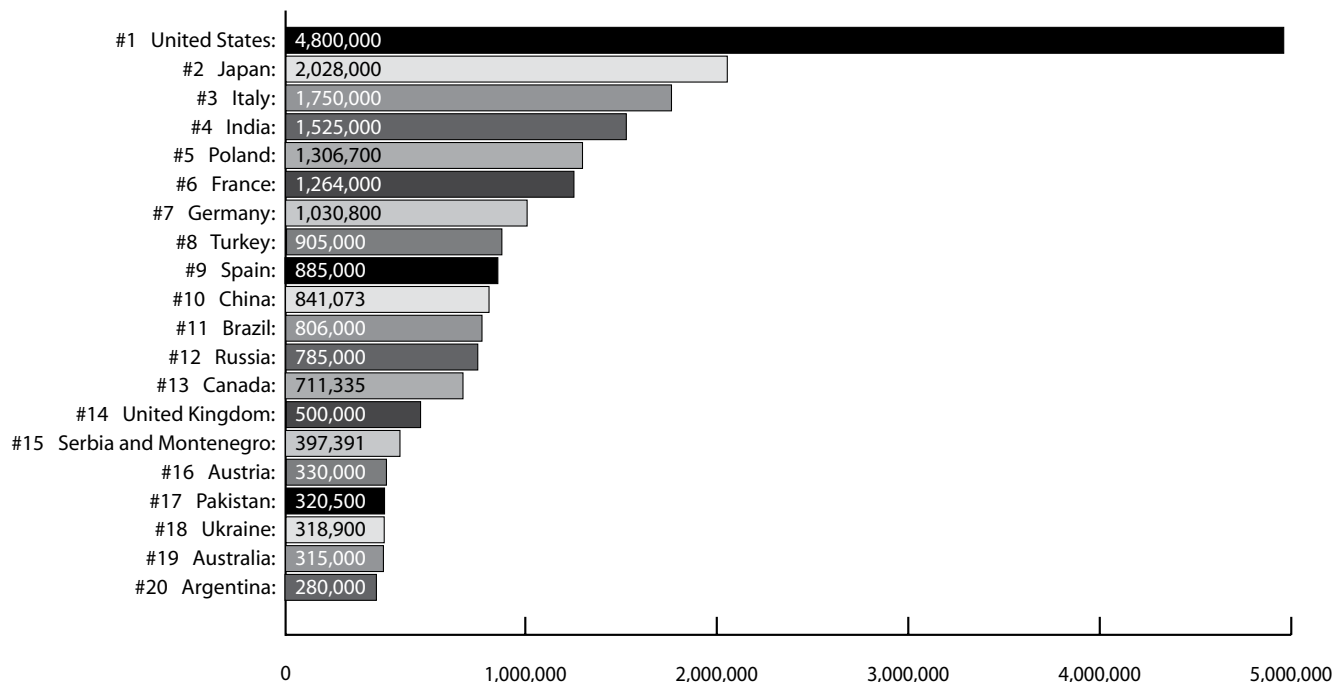
ton. Brazil is also the world's biggest producer of coffee, oranges and sugarcane, which is used primarily for conversion into ethanol for the domestic fuel market. As a world leader in ethanol production, Brazil is working diligently to gain access to the U.S market. (See Brazil: World's First Sustainable Biofuels Economy, p. 15.)

## Record Harvests

2010 has been a record harvest year for Brazil. In fact, the 2010 total grain harvest for Brazil is expected to increase by 8.9% over 2009, according to the Instituto Brasileiro de Geografia e Estatística, or IBGE.

"The national harvest of cereal, legumes and oilseeds is expected to be 145.9 million metric tons in 2010, 8.9% above that of 2009 (134.0 million metric tons), 0.1% above the May estimate (145.8 million metric tons) and 36.342 metric tons above the record harvest of 2008 (145.9 million metric tons)." These figures were compiled by the Systematic Survey of Agricultural Production (LSPA), dated

## Estimated Tractor Usage by Country



SOURCE: nationmaster.com, World Resources Institute

The number of tractors in use refers to the total number of wheeled and crawler tractors used in ag. Garden tractors are excluded.

June 2010.

According to IBGE, the area harvested in 2010, 46.8 million hectares, represents a decrease of 0.9% vs. the area harvested in 2009. The three main crops, soybeans, corn and rice, which account for 83.1% of the area planted, recorded changes of +7.2%, -6.7% and -6%, respectively, compared to the previous year.

As for the output of these three items (91.0% of the total produced), corn and soybeans recorded increases of 4.4% and 19.4%, respectively, and rice, a decrease of 10.4%.

With so much land now in production, Brazil has also become a major consumer of agricultural equipment. According to nationmaster.com, Brazil now ranks 11th as a nation in terms of tractor usage, with more than 800,000 tractors now in operation throughout the country. Argentina ranks 20th.

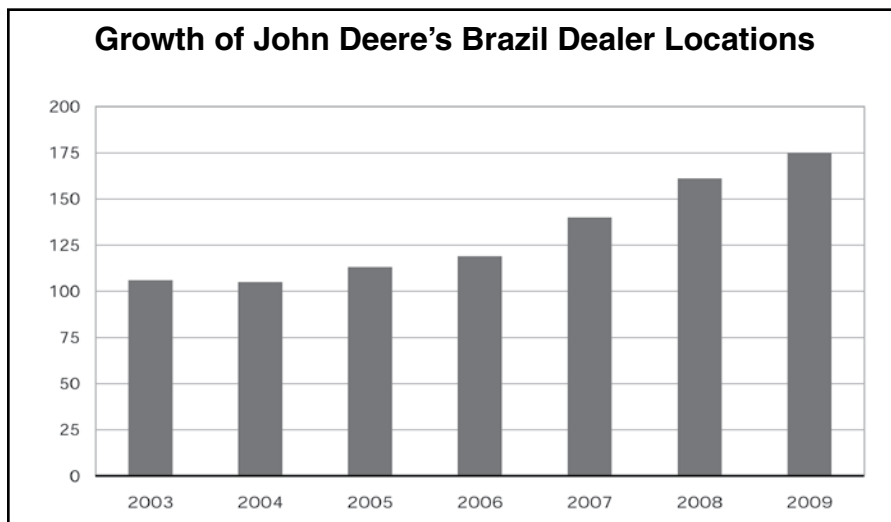
In fact, the rapid mechanization that has been taking place within the two countries is boosting production of key agricultural products. It remains to be seen, however, if the country's record-high harvest will have implications for U.S. farmers.

### Ag Equipment Distribution Footprint in Brazil

John Deere has the highest number of dealerships in Brazil, followed by New Holland, Massey Ferguson and Valtra. The size of dealerships range from solo operations to multi-store complexes that span two or three states. More than 800 agricultural equipment dealerships operate in Brazil, and the dealer footprint is more dense in the grain regions to the south.

In general, equipment dealerships in Brazil use wholesale financing to purchase inventory from the OEMs. To keep inventories in line with demand, pre-selling of equipment is also a standard practice.

Financing is an important factor in selling equipment, regardless of type. The government-financing program is designed primarily for smaller scale farmers who fall below



**To meet Brazil's burgeoning demand for ag machinery, John Deere has been steadily growing its equipment dealer base during the last decade. (Source: Deere & Co.)**

set limits, such as a farm's value or horsepower requirements. For these customers, there's a network of government-controlled financing institutions that offer highly competitive financing.

Larger operations are expected to make their own private financing arrangements. CNH Capital, for example, has established its own bank in Brazil to meet the wholesale and retail financing needs of its dealers and customers there.

The bottom line on financing: the dealers and brands that can work with the government program or arrange competitive private financing are the ones that are most likely to sell equipment in Brazil.

### Market Opportunities for Equipment Manufacturers

Manufacturers are now cashing in on the strength and growth of the South American market. Using its proprietary revenue models, JP Morgan estimates South American revenues were up 75% for AGCO and 65% for CNH during the second quarter of 2010, compared with the second quarter of 2009. It also reported the following sales increases in farm equipment sales for June 2010, compared with June 2009:

- AGCO's tractor sales jumped 75%.
- CNH's tractor unit sales were up 35%.
- Deere's tractor sales were up 10%.
- CNH's combine sales were up 145%, while AGCO's combine

### Brazil: World's First Sustainable Biofuels Economy

Nobody exports more ethanol than Brazil. And only the United States produces more ethanol. In 2009, the two trading partners accounted for 89% of the world's production.

Brazil, however, holds claim to the world's first sustainable biofuels economy, and is widely viewed as a model for other countries. Every light passenger car runs on either a gasoline-ethanol blend, or 100% ethanol — more than 10 million vehicles. But some observers say that the successful Brazilian ethanol model is unique to Brazil, due to its advanced agri-industrial technology and enormous tracts of arable land. Others say the model is only applicable to some countries in the tropical zone of Latin America, the Caribbean and Africa.

The country has been fine tuning its ethanol fuel program for 30 years, and today it is based on the most efficient agricultural technology for sugarcane cultivation in the world, and relies on cheap sugarcane as feedstock. The residual cane waste, called *bagasse*, is used for heat and power, which results in very competitive prices. The U.S. EPA designates Brazilian sugarcane ethanol as an advanced biofuel due to its 61% reduction of total life cycle greenhouse gas emissions.

sales fell by 27%, and Deere's sales dropped 59%.

From January through June 2010, JP Morgan estimates ag equipment sales in Brazil are up by 57%, with record-high harvests driving the country's ag equipment sales through the first half of the year.

In another report to investors, JP Morgan cited the following sales data from the Associação Nacional dos Fabricantes de Veículos Automotores (ANFAVEA):

- Total farm tractor sales in Brazil increased by 45% year-over-year in June, 64% in May, and 55% in April.
- Tractor production was up 87% year-over-year in June.
- Combine sales were up 64% year-

over-year in June, 29% in May and 2% in April.

- Combine sales increased 17% for the first time in 5 months,

***“More than 800 ag equipment dealers operate in Brazil. The dealer footprint is more dense in the grain regions to the south...”***

rebounding from its seasonally slow period.

- Combine production was up sig-

nificantly year-over-year.

In its analysis of agricultural trends in Brazil that bode well for equipment makers in South America, JP Morgan cites several positive factors for the industry:

- South America has just delivered record crops, and Brazil could potentially be competing with the U.S. for corn exports just as China is starting to import corn.
- Protein prices are recovering as supply-side dynamics are tightening.
- The U.S. ethanol industry is facing renewed regulatory challenges. Brazil eliminated its 20% tariff on imported ethanol through 2011. However, it's asking the U.S. to also eliminate its import tariff.

## Improving Grain Storage: An Opportunity for Manufacturers

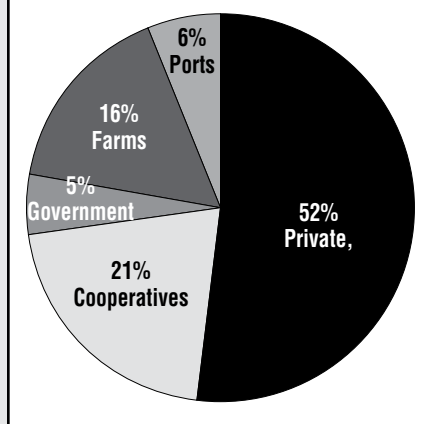
Currently, Brazil's grain storage capacity is less than ideal. Its new Ag Plan for 2010-11, doubles the resources needed to finance storage capacity to R\$1 billion. The government is offering R\$1.3 million in individual contracts and R\$4 million to groups and cooperatives at a cost of 6.75% with 8-12 year repayment terms and a 3-year grace period.

According to an analysis by JP Morgan, Brazil has just 123 metric tons of static storage capacity vs. an expected production of 147 metric tons this year (and growing in the coming years). Moreover, just 15% of this storage capacity is located on the farm, which means farmers typically have little

flexibility in timing their sales.

Using third-party storage facilities costs R\$18-25/tonne per month. The Moderninfra program hopes to encourage more on-farm storage. “We estimate that grain storage capacity costs \$80/ton to build. Hence the R\$1 billion funds would be enough to build 6.7 metric tons of new storage,” says JP Morgan analyst Debbie Bobovnikova. “This should grow total storage by 6% to 130 metric ton but more importantly grow farmers’ storage by ~35%, giving them a 20% share of total storage. This will not be enough to eliminate the problem entirely, but we view it as a step in the right direction.”

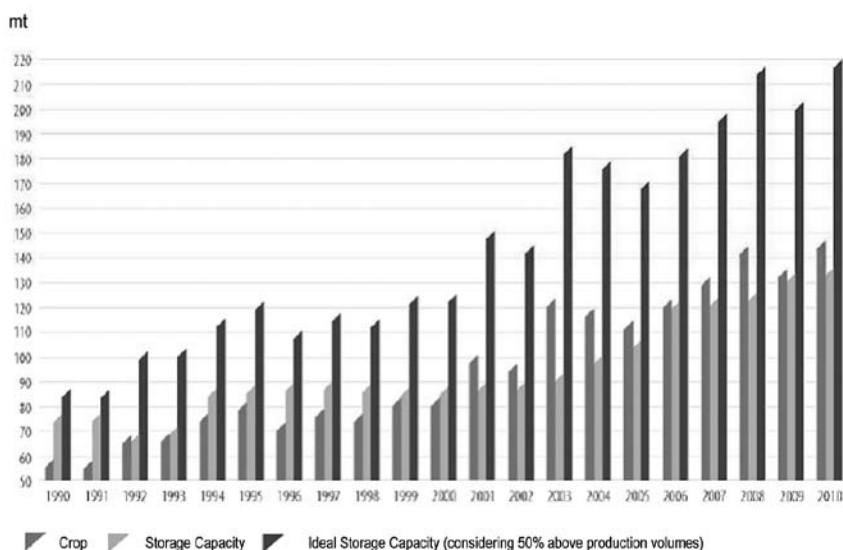
### Brazil's 'On-Farm' Storage is Minimal



**Brazilian grain storage capacity is far below the ideal. With little “on-farm” storage, Brazil’s farmers have little flexibility in timing sales of their crops.**

Source: Kepler Weber APIMEC Presentation June 2010, MAPA

### Brazil's Grain Storage Capacity vs. Crop Production



Source: Kepler Weber APIMEC Presentation June 2010, MAPA.

**Brazil's grain storage facilities have not expanded fast enough to keep up with the country's rapid growth in agricultural production.**

# PART IV:

## Brazil and Argentina: Ag Production Drives Growth

Characterized by large and well-developed agricultural, mining, manufacturing and service sectors, Brazil's economy outweighs that of all other South American countries and continues expanding its presence in world markets.

Since 2003, Brazil has steadily improved macroeconomic stability, building up foreign reserves, reducing its debt profile by shifting its debt burden toward real-dominated and domestically held instruments, adhering to an inflation target, and committing to fiscal responsibility.

In 2008, Brazil became a net external creditor and two ratings agencies awarded investment grade status to its debt. After record growth in 2007 and 2008, the onset of the global financial crisis hit Brazil in September 2008. Brazil's currency and its stock market — Bovespa — saw large swings as foreign investors pulled resources out of Brazil. Brazil

experienced two quarters of recession, as global demand for Brazil's commodity-based exports dwindled and external credit dried up. However, Brazil was one of the first emerging markets to begin a recovery. Consumer and investor confidence revived and GDP growth returned to positive in the second quarter, 2009. The Central Bank expects growth of 5% for 2010.

### How Argentina Stacks Up

Argentina ranks second in terms of total agricultural production and equipment sales in South America, behind Brazil. Today, most of the largest multinational manufacturers of farm machinery compete for market share within the region. These include John Deere; CNH, with New Holland and Case IH; AGCO, with its Massey Ferguson, Valtra, AGCO and Challenger brands; and more recently Claas of Germany.

According to industry sources, John Deere has had the highest market share both historically and in recent years in Argentina.

In addition, several state-run manufacturing facilities in both Brazil and Argentina produce a full range of tractors and combines, along with specialty equipment and implements, such as planters/seeder and sprayers that are customized to local preferences and regional cultures not easily accessed by the multinationals.

In fact, several regional brands now meet or exceed internationally-recognized quality standards, and are sold around the world. Argentine equipment brands that are making their way into the U.S. include:

- Vassalli combines.
- PLA, Metalfor, Favot and Apache sprayers, among others.
- Agrometal, Crucianelli, Bertini, Pierobon and Tanzi seeding/planting machines.

### Brazil Market Share August 2010

Brand	Combines	Tractors
John Deere	32.6%	13.1%
Case IH	14.6%	0.02%
New Holland	33.4%	22.8%
AGCO+Valtra	19.3%	54.8%
Agrale	N/A	0.03%

*Source: JP Morgan*

### Dealer Networks in Brazil

Brand	Dealerships
John Deere	185
New Holland	180
Massey Ferguson	169
Valtra	140
Agrale	89
Case IH	60
Agritech	53
<b>Total</b>	<b>876</b>

**Numbers are approximate and may include branches and/or sales outlets that are not fully operational.**

*Source: ANFAVEA*

### Predominant Crops in Brazil 2009-10

	Planted Area (Hectares)	Average Yield (Metric tons)	Conversions
Soybeans	21,743,100	57,165,000	27.22 kg = 1 Bushel
Corn	14,171,800	51,003,900	25.40 kg = 1 Bushel
Rice	2,909,000	12,602,500	27.22 kg = 1 Bushel
Wheat	2,396,200	5,848,000	12.70 kg = 1 Bushel

*Note: 1 Acre = 0.4047 Hectares*

### Ag Equipment Unit Sales in Brazil

Combines Sold	FY 2009	FY 2008	FY 2007
John Deere	1,262	877	44%
New Holland	1,295	790	64%
Case IH	567	374	52%
AGCO+Valtra	749	495	51%
<b>Total</b>	<b>3,873</b>	<b>2,536</b>	<b>53%</b>
Tractors Sold	FY 2009	FY 2008	FY 2007
John Deere	6377	4,755	34%
New Holland	11,093	8,489	31%
Case IH	860	471	83%
AGCO+Valtra	26,626	17,198	55%
Agrale	1,667	1,172	42%
<b>Total</b>	<b>48,538</b>	<b>33749</b>	<b>44%</b>

*Source: ANFAVEA, JP Morgan*

- Richiger, Maizco, Akron and Mainero cereal handling (grain harvesting) equipment.
- Ombú, Cestari and Ascanelli grain carts.

The role of the shortline manufacturer in Brazil has been mainly to fill niche markets. Examples include the self-propelled coffee harvesters developed by Jacto, and the shortline manufacturers that provide implements to the sugarcane industry.

In Argentina, agricultural machinery manufacturers also target speciality niches such as no-till farming, grain carts that include unloading mechanisms, sprayers and forage equipment.

A few multinationals have also tried to adapt existing technology after seeing a market expansion.

### Argentina Market Share April 2010

Brand	Combines	Tractors
John Deere	43.3%	40.3%
Case IH	29.9%	3.6%
New Holland	10.8%	15.6%
AGCO Allis	6.1%	13.5%
Masey Ferguson	5.1%	17.6%
Valtra	N/A	9.3%
Challenger	4.8%	0.1%

Source: Octavio Bertoli Seeber,  
Manager, Dosbá Hnos. S.R.L.,  
Victoria (E. Ríos), Argentina

### Dealer Networks in Argentina

Brand	Dealerships
John Deere	54
Case IH	28
New Holland	57
AGCO Allis	75
Masey Ferguson	50
Valtra	55
Claas	11

Numbers are approximate and may include branches and/or sales outlets that are not fully operational.

Source: Octavio Bertoli Seeber,  
Manager, Dosbá Hnos. S.R.L.,  
Victoria (E. Ríos), Argentina

### Distribution Footprint

In Argentina, agricultural equipment is typically sold through dealer networks for both the multinational and national brands. One notable exception is Claas, which distributes

***"In Argentina, John Deere has had the highest market share historically and has maintained it in recent years...."***

directly through 11 independent dealers who sell and support Claas equipment.

Most equipment dealers do not buy their equipment inventory from

the manufacturers. Instead, equipment makers such as John Deere, New Holland, Case IH and MF own the equipment dealer's inventory; invoicing is direct from the manufacturer to the end user. The dealer acts as a sales agent and profits through sales commissions.

Within the last year, the major equipment brands in Argentina have begun to build out their distribution networks, similar to what is seen today in the U.S. The exception is John Deere, which has maintained a well developed distribution network for half a century. While the others, such as Massey Ferguson and New Holland, have been active in the market historically, they have consolidated during periods of economic volatility. Deere's long-term presence explains its success in Argentina.

### Predominant Crops in Argentina 2009-10

	Planted Area (Hectares)	Average Yield	Conversions
Soybeans	18,650,000	300 kg /ha	27.22 kg = 1 Bushel
Corn	2,525,000	880 kg/ha	25.40 kg = 1 Bushel
Wheat	3,070,000	257 kg/ha	27.22 kg = 1 Bushel
Sunflowers	1,231,490	157 Kg/ha	12.70 kg = 1 Bushel

Note: 1 Acre = 0.4047 Hectares

### Ag Equipment Sales in Argentina

Combines Sold	FY 2009	FY 2008	FY 2007
John Deere	219	1,013	696
New Holland	63	244	212
Case IH	122	423	249
AGCO Allis	11	39	70
Massey Ferguson	34	132	123
Challenger	28	108	65
Don Roque	137	316	401
Claas	32	170	111
<b>Total</b>	<b>646</b>	<b>2,445</b>	<b>1,927</b>
Tractors Sold	FY 2009	FY 2008	FY 2007
John Deere	1,259	2,613	1,931
New Holland	576	1,196	976
Case IH	133	326	245
AGCO Allis	606	1,162	991
Massey Ferguson	596	1,724	1,339
Challenger	19	29	7
Valtra	279	902	748
<b>Total</b>	<b>3,468</b>	<b>7,952</b>	<b>6,237</b>

Source: Octavio Bertoli Seeber, Manager, Dosbá Hnos. S.R.L.,  
Victoria (E. Ríos), Argentina



## After Sales Support

Equipment dealers in Argentina depend on after sales service and support to generate additional income. Dealers agree to cover the machine's warranty, and to support the equipment with technical service, parts and the overhead associated with a full-service dealership — employee salaries, training, service vehicles, advertising and marketing and so on.

Similar to the U.S., if a customer requests a part, and that part has to be ordered, the customer may seek a less costly off-brand part. This could have warranty expense recovery implications, as most warranties require genuine parts for repairs. But unlike the U.S., dealer territories are not protected. This means that the dealer's after sales responsibilities can include equipment sold by other in-network dealers within an assigned territory.

In fact, local dealers are responsible for supporting the products they represent, regardless of who sold it. This has several implications for dealers. For example, those dealers who actively participate in ag trade fairs and exhibitions end up promoting the equipment for dealers throughout Argentina who represent the brand.

Despite these differences, customers are ever-more demanding. Successful dealerships have stepped up their investment in training and product support, spare parts inventories, service vehicles and qualified technicians. Dealers who have taken on the added investment understand the role of after sales in their future growth—that without robust product

Farm Net Income (Loss) – Brazil & Argentina (in billions of U.S. dollars)			
	2009	2010 Forecast	2011 Forecast
<b>Brazil</b>			
Soybeans	\$2.7	\$1.9	\$2.3
Sugarcane	2.3	6.4	7.9
Other (includes corn, paddy rice, and cotton)	(2.6)	(3.0)	(1.1)
<b>Argentina</b>			
<b>Total</b>	<b>(\$2.5)</b>	<b>\$5.3</b>	<b>\$3.8</b>

Source: Deere & Co.

support, their profitability and ability to survive is at risk.

## Mechanization in Argentina

High export taxes have prompted farmers in Argentina to look for productivity gains in farm operation and main-

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***“Local dealers are responsible for supporting the products they represent, regardless of who sold it...”***

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tenance. Currently, the state retains a percentage of total grain exports.

This, in turn, has fueled the race for mechanization in Argentina. In fact, farmers throughout Argentina have readily adopted the latest equipment and farm practices, such as no-till farming techniques.

## Land Use

As in Brazil, most agricultural operations in Argentina cover vast expanses of land. Brazil, however, is emerging as a leading agricultural producer more rapidly, as it develops agricultural operations within equatorial zones that allow for two harvests annually.

It's important to note that these extensive farming operations are backed by strong financial support. In Argentina, for example, many farms produce crops “without earth” — in other words, they rent fields exclusively to produce, paying rent to lenders, land owners, and in some cases, to themselves.

These large-scale production farms can achieve substantially lower operating and input costs — seeds, chemicals, equipment, etc. — making the investment far more profitable and reducing some of the risks associated with farming.

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## PART V:

# Perspectives on South America's Potential

Minneapolis-based Power Products Marketing, which specializes in ag, utility vehicle and construction equipment sales market research at the dealer level, has surveyed more than 100 equipment dealers in Brazil since 2006. Jeff Schultz and Isaac Thibaudeau, who conducted many of the dealer surveys, agree: demand for agricultural equipment is strong.

Among their key findings: the tractor market in Brazil grew from 19,000 units in 2006 to 45,000 units in 2008. "Most of the dealers we spoke with in 2009 were having a good year, and we expect 2010 will be very good," says Schultz. "In fact, the dealers we talked to said they would have had even more sales if the manufacturers had been able to fill more orders."

According to Schultz, different regions have their specialties, and the equipment requirements will vary according to the crops being produced. In general, the biggest states produce much of Brazil's sugarcane; the sugar plantations depend on huge fleets of large tractors for harvesting and hauling. The southern grain-growing regions also rely on modern agricultural equipment and farming practices to produce good yields and high-quality grains.

Schultz points out that many of the farming operations in Brazil are much larger than their U.S. counterparts. While nearly one-third of the land in Brazil is off-limits to farming under the government's conservation programs, Brazil has the world's largest agricultural land resources.

"If you're in Brazil or Argentina, you have to make quite an investment in your business," notes Schultz. "So the farmers, dealers and OEMs who are successful in these countries all operate with a certain level of sophistication."

Because of the size and scope of farming in the region, "it's hard to tip-toe into Brazil," he says. "You've either got to jump in, or go into another

country first to test the waters."

Major obstacles to market entry include the government's domestic-content rules, which require manufacturers to invest in the facilities and materials needed to build or assemble locally-sold products—and to hire local workers. Other hurdles include tariffs on used equipment, which can be prohibitive in Brazil.

Yet despite these and other obstacles, competition is keen. It's not uncommon to see market share swings of 5% or more, even within a 1- or 2-year period. "This is still a

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***"They're looking to the U.S. as a source of good used equipment that's been maintained by OEM-certified dealers..."***

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growing market," says Schultz. "From a brand perspective, the OEMs have more brand acceptance, but it's a dynamic market, even in Brazil."

In terms of the market's potential for manufacturers, the trend for larger equipment mirrors the trend toward larger farms.

"My overall perception is there's an opportunity for used equipment sales, with the larger tractor types making up a higher percentage of retail sales compared with compact type tractors," says Schultz. "Planters are another viable market opportunity for all manufacturers, big or small."

Eduardo Montero, President and CEO of Terranova Holdings LLC, in Carmel, Ind., sees used equipment—and the myriad of parts needed to keep existing equipment fleets running — as the next big opportunity for U.S.-based OEMs seeking to tap markets in both Central and South America.

"For Brazil and Argentina, and

Latin America in general, people see the value of owning their equipment and they're looking to the U.S. as a source of good used equipment that's been well maintained by OEM-certified dealers for the life of the equipment," says Montero, whose firm exports farm equipment and parts to plantations throughout the region.

He notes that the Brazilian domestic-content requirements of the Mercosur Trade Agreements have had some unintended consequences for the OEMs who have set up shop in Brazil. While the manufacturers in Brazil rely on common platforms, more and more content is sourced from Brazil. This includes spare parts, and if the equipment that was built in Brazil has quality issues, sourcing parts becomes an issue.

"For some reason, some of my customers have waited up to 60 days to get a part for those tractors and implements made in Brazil," says Montero. "When you have a plantation with 100-150 tractors, that is a problem."

And as it turns out, it's far easier for customers to access used equipment and OEM parts and components or will-fit parts sourced from suppliers in the U.S.

### Technological Explosion: A 'Tipping Point'

Jeff Schick, global director of the ag and forestry market segment for Eaton Corp., believes that technology will play a critical role in the race for global dominance in the ag sector. Eaton is an \$11.9 billion company that makes components for a variety of industries, including agriculture.

Schick emphasizes that agriculture is rapidly becoming a global business, with Brazil adding acres and many other nations in need of new farming technology to keep up with expanding global demand for ag commodities.

"Those technologies are going to have to come from somewhere," he says. "I'm firmly convinced that we're

at a tipping point of a literal explosion in agricultural technology.”

### **Brazil: Pass the Bread Basket, Please**

By all accounts, the agricultural economy in Brazil is outpacing its competitors, and is poised to surpass the top-ranked U.S. within the next two decades. And Argentina isn't far behind. In fact, the Latin American region appears to be on the rebound after generations of civil unrest, oppressive regimes, and misguided economic policies.

Most Americans would be shocked to learn that their hard-earned title as “Breadbasket of the World” could change hands within their lifetimes. For more than a century, abundant farmland, technical know-how, and favorable government policies have enabled the U.S. to literally feed the world, and nations around the world have reciprocated by importing staggering amounts of American grains, meat and other agricultural products.

But America's ag sector exports more than corn flakes and Coca Cola. The same technologies and practices that made the U.S. the world's number one ag economy have set the table, so to speak, for other countries endowed with abundant arable land and an entrepreneurial spirit. There is nothing shocking about that.

Knowledge passes from nation to nation as it does among generations, and has as long as countries have traded with one another. The emergence of Brazil and Argentina as global bread baskets opens opportunities for U.S. farm equipment makers, equipment dealers and others. To paraphrase an ancient philosopher, economies don't live by bread alone, but by knowledge and the transfer of that knowledge.

### **Brazil, Argentina Leading The Way With No-Till**

When you look at the adoption of no-till around the world, there's no

doubt that Brazil and Argentina are among the leaders in expanding the use of reduced tillage.

Brazil and Argentina trail only the U.S. when it comes to no-tillage adoption, says Frank Lessiter, editor of the monthly No-Till Farmer publication.

Based on 2008 data, there were 261.5 million acres of no-till in the world. The U.S. had 65.6 million acres, Brazil had 62.9 million acres and Argentina had 48.7 million acres of no-till. In fact, these three countries made up 68% of the world's no-till acreage in 2008.

Rolf Derpsch, a no-till consultant in Asuncion, Paraguay, says the world-

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***“Latin America appears to be on the rebound after generations of civil unrest, oppressive regimes, and misguided economic policies....”***

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wide no-till acres acreage grew from 111.1 million acres in 2003 to 261.5 million acres by 2008.

“The fastest adoption rates have been experienced in South America where some countries are using no-tillage on about 70% of their total cultivated acres,” he says. “More than two-thirds of the no-till practiced in South America is permanently under this system. Once started, the soil is never tilled again.”

**No-Till Growth in Brazil.** The first on-farm no-till acres were seeded in 1972, 7 years after no-till got started in North America. While it took no-till in Brazil nearly 20 years to catch on, the technology soon experienced phenomenal growth and reached 7.5 million no-tilled acres by 1994.

Brazilian no-tillers are well ahead of their counterparts in North America in several areas. First, they have readily adopted the idea of per-

manent no-till and avoid moving back and forth among tillage systems, as is the case with some U.S. growers. They are also ahead of North American farmers in recognizing the benefits of incorporating cover crops into their no-till systems.

Derpsch credits the farm equipment industry with playing a key role in the steady growth of no-till in Brazil.

“They engaged early on in the production of specialized no-till equipment,” he says. “As a result, Brazilian no-till seeders are exported all over the world.”

The Food and Agriculture Organization arm of the United Nations has played a key role in distributing specialized Brazilian no-till equipment to small acreage farmers throughout the world where seeders may be pulled with horses or laborers. Machinery manufacturers helped sell the idea that no-till is adaptable to all climates, soil and cropping conditions.

**40 Years of No-Till in Argentina.** While no-till started in the early 1970s in Argentina, some growers soon gave up due to the lack of adequate herbicides for weed control and a lack of specialized machinery. Yet, once these concerns were overcome, the concept that tillage was necessary to grow crops was quickly abandoned.

The no-till acreage in Argentina dramatically grew ten times from 1994 to 48.7 million acres in 2008. This represents 69% of the country's cropland being no-tilled.

Derpsch says the rapid growth of no-till in Argentina was due to farm machinery manufacturers developing specialized no-tillage machines. Among the many no-till seeder manufacturers in Argentina, at least 15 firms export their equipment.

Early on, growers felt cover crops would remove too much moisture from the soil. But this has changed in recent years as researchers found water use efficiency is actually improved with cover crops.

# Appendix 1

## Brazil Demographics

Brazil became an independent state in 1822 after almost three centuries of Portuguese rule, and a republic in 1889, the year slavery was abolished.

South America's largest and most populous state overcame more than five decades of military intervention when power was peacefully ceded to civilians in 1985. Highly unequal income distribution remains a major social and political issue. Exploiting vast natural resources and boasting a large labor pool, Brazil is its continent's leading economic power.

**Climate:** Mostly tropical, but temperate in the south.

**Size:** 3.3 million square miles, roughly the same as the lower 48 U.S. states, half the South American landmass.

**Media:** Ownership is highly concentrated, with homegrown conglomerates such as Globo, Brazil's most successful broadcaster, dominating TV and radio networks, newspapers and pay-TV operations.

**Population:** 188,078,227 (July 2006 est.).

**Racial/ethnic composition:**

55% white (includes Portuguese, German, Italian, Spanish, Polish), 38% mixed white and black, 6% black, 1% other (includes Japanese, Arab, Amerindian).

**Religions:** Roman Catholic (nominal) 73.6%, Protestant 15.4%, Spiritualist 1.3%, Bantu/voodoo 0.3%, other 1.8%, unspecified 0.2%, none 7.4% (2000 census).

**Government:** A federal republic with a multiparty political system, Brazil directly elects its president to 4-year terms. The chief of state shares power with a two-house National Congress, composed of a Federal

Senate and Chamber of Deputies; and the Supreme Federal Tribunal (court), whose 11 "ministers" are appointed for life by the president and confirmed by the Senate. Brazil is the world leader in electronic online voting (100 million voters.)

**Language:** Portuguese.

**Capital:** Brasilia.

**Adult literacy:** 86.4%.

**Wealth:** \$3,450 per capita in gross national income in 2005, up from \$3,000 in 2004, ranking Brazil 74th. (The U.S. is sixth at \$43,740.) More

than 80% of Brazil's wealth is owned by 1% of the population despite the efforts of several governments to reduce the gap.

**Economy:** \$1.536 trillion gross domestic product (2005 est. purchasing power parity), making Brazil the world's 15th largest economy. The country is a major producer of textiles, shoes, chemicals, cement, lumber, iron ore, tin, steel, aircraft and motor vehicles. In agriculture, it is a leader in coffee, soybeans, wheat, rice, corn, sugarcane, cocoa, citrus and beef.

*SOURCES: CIA World Factbook; Embassy of Brazil, BBC, World Bank*



# Appendix 2

## Argentina Demographics

In 1816, the United Provinces of the Rio Plata declared their independence from Spain. After Bolivia, Paraguay, and Uruguay went their separate ways, the area that remained became Argentina. The country's population and culture were heavily shaped by immigrants from throughout Europe, but most particularly Italy and Spain, which provided the largest percentage of newcomers from 1860 to 1930. Up until about the mid-20th century, much of Argentina's history was dominated by periods of internal political conflict between Federalists and Unitarians and between civilian and military factions. After World War II, an era of Peronist populism and direct and indirect military interference in subsequent governments was followed by a military junta that took power in 1976. Democracy returned in 1983 after a failed bid to seize the Falkland (Malvinas) Islands by force, and has persisted despite numerous challenges. The most formidable was a severe economic crisis in 2001-02 that led to violent public protests and the successive resignations of several presidents.

**Climate:** Mostly temperate; arid in southeast; subantarctic in southwest.

**Land size:** 2,736,690 square kilometers, or slightly less than three-tenths the size of the U.S.

**Media:** The government owns a TV station and a radio network. Argentina also has more than 2 dozen TV stations, hundreds of privately owned radio stations, and a high rate of cable TV subscription usage (2007).

**Population:** 40,913,584 (July 2010 est.)

**Racial/ethnic composition:** 97% white (mostly Spanish and Italian), 3% mestizo (mixed white and Amerindian ancestry), Amerindian, or other non-white groups

**Religions:** nominally Roman Catholic 92% (less than 20% practicing), Protestant 2%, Jewish 2%, other 4%.

**Government:** A republic, with Executive, Legislative and Judicial branches of government, Argentina directly elects its President on the same ticket as its Vice President by popular vote to four-year terms. The President serves as both the chief of state and head of government and is eligible for a second term. Argentina's bicameral National Congress consists of a 72-seat Senate, whose members are elected by direct vote to six-year terms; and the Chamber of Deputies, whose 257 members are elected to four-year terms. The judicial system is a mixture of U.S. and West European legal systems; Argentina has not accepted compulsory International Court of Justice jurisdiction. Supreme Court judges are appointed by the President with approval of the Senate. The Argentine Congress in 2006 passed a bill to gradually reduce the number of Supreme Court judges from seven to five.

**Language:** Spanish (official), Italian, English, German, French.

**Capital:** Buenos Aires.

**Wealth:** \$13,400 per capita in 2009 (est.), ranking Argentina 80th. The U.S. estimate was 11th in 2009 at \$46,000.

**Economy:** \$548.8 billion gross domestic product (2009 est. purchasing power parity), ranking Argentina 161st worldwide. Key industries include food processing, motor vehicles, consumer durables, textiles, chem-

icals and petrochemicals, printing, metallurgy, steel. Agricultural products include sunflower seeds, lemons, soybeans, grapes, corn, tobacco, peanuts, tea, wheat, livestock.

*SOURCE: CIA World Factbook*





## Other Reports from Ag Equipment Intelligence

- ✓ Biofuels: Possibilities & Potential for Ag Equipment
- ✓ Russia, Ukraine & Kazakhstan: The State of Farm Technology in the Commonwealth of Independent States
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- ✓ 2009 Ag Equipment Intelligence Annual Business Outlook & Trends - Farm Equipment Forecast
- ✓ 2008 Ag Equipment Intelligence Annual Business Outlook & Trends - Farm Equipment Forecast
- ✓ 2007 Ag Equipment Intelligence Annual Business Outlook & Trends - Farm Equipment Forecast
- ✓ 2006 Ag Industry Watch Annual Business Outlook & Trends - Farm Equipment Forecast

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