Strategic Consultation on Modernizing and Industrializing Philippine Agriculture
Inanglupa Movement, April 7-8, 2016

Market-oriented and competitive agriculture

PROF. ROLANDO T. DY, PH.D.
Professor, School of Management
University of Asia and the Pacific

DR. LEONARDO A. GONZALES
President, Sikap/Strive Foundation

INCLUSIVE GROWTH

"Participation and benefit sharing."

United Nations Development Programme

"Allows people to contribute to and benefit from economic growth."

OECD

Three pillars:
- high, sustainable growth
- broader access to opportunities
- safety nets

ADB
ASIAN DEVELOPMENT BANK

"Broad-based growth is growth that includes all major income groups, ethnic groups and women, and that significantly reduces poverty."

USAID
FROM THE AMERICAN PEOPLE

"Focuses on economic growth which is necessary and crucial condition for poverty reduction."

World Bank

The Philippines has the highest poverty incidence among ASEAN peers… at least 2 times.

National Poverty headcount (%)

Country	2009	2010	2011	2012	2013	2014
Philippines	**26.3**			**25.2**		**25.8**
Indonesia	14.2	13.3	12.5	12.0	11.4	11.3
Vietnam		20.7		17.2		13.5
Cambodia	23.9	22.1	20.5	17.7		
Thailand	17.9	16.4	13.2	12.6	10.6	10.5
Malaysia	3.8			1.7		0.6

- *Vietnam's poverty rate has fallen from nearly 60 percent to 20 percent in the past two decades (World Bank, 2013)*

Source: World Bank

Philippines' rural poverty is highest…

~three times the average of ASEAN-4.

Philippines: **~40 percent** in 2014

46.9 percent in 2000

en.wikipedia.org

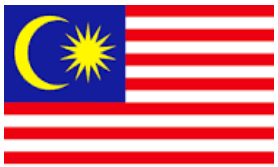
Thailand : **~13.9 percent** in 2013

51.5 percent in 2001

Indonesia : **~13.8 percent** in 2014

21.8 percent in 2006

Vietnam : **~17.4 percent** in 2010



Malaysia : **~8.4 percent** in 2009

13.5 percent in 2002

Sources:
http://rksi.org/sites/default/files/document/351/6-country-note-tha.pdf
http://www.indonesia-investments.com/finance/macroeconomic-indicators/poverty/item301
http://www.worldbank.org/content/dam/Worldbank/document/vn_PA2012Executive_summary_EN.pdf
http://www.tradingeconomics.com/vietnam/poverty-headcount-ratio-at-rural-poverty-line-percent-of-rural-population-wb-data.html
Reyes and Valencia (circa 2000a) for rural poverty in 2000.

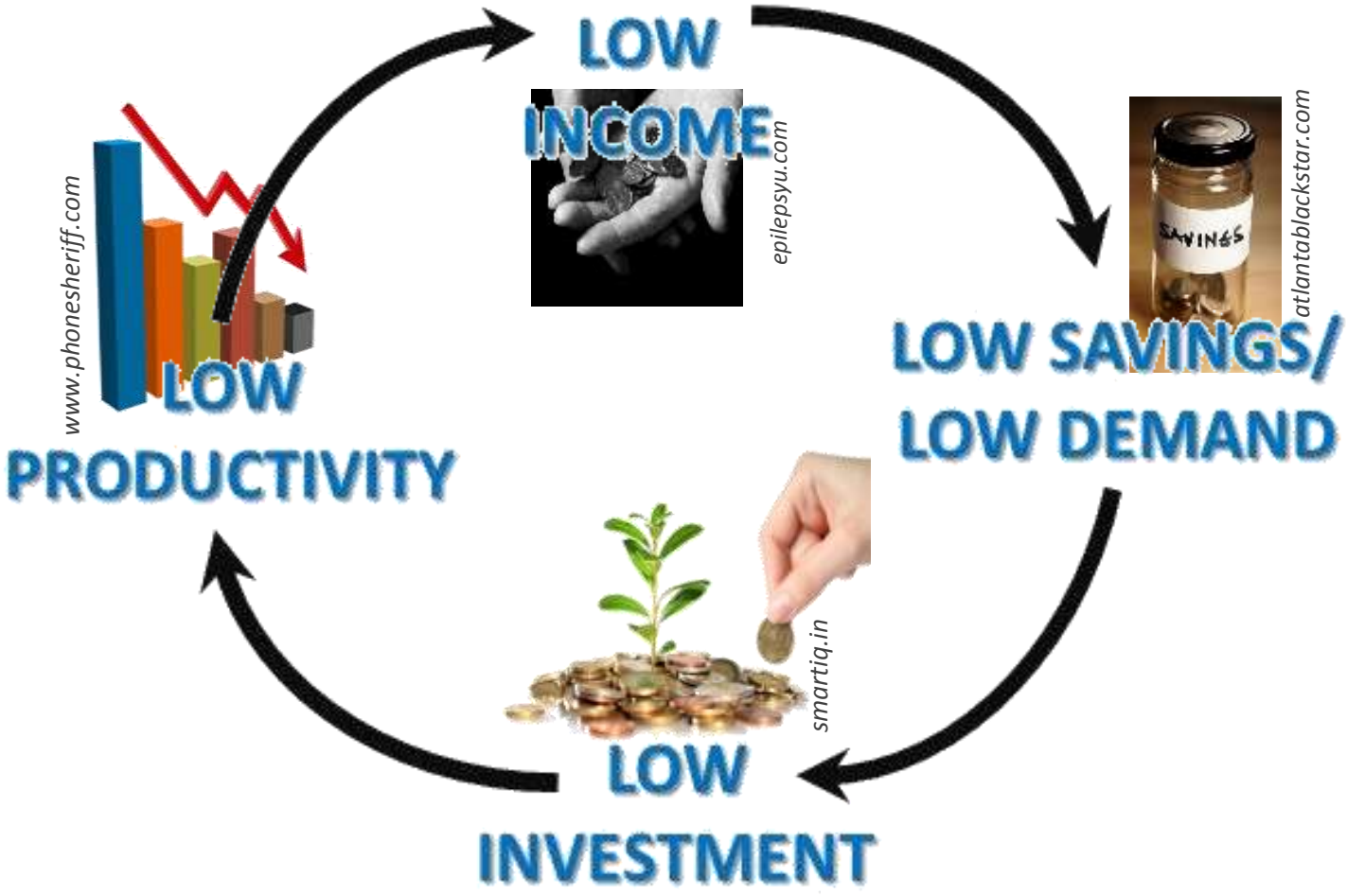
Vicious Circle of Poverty

The main cause of the vicious circle of ***poverty*** *is* ***lack of investment****.*
Low investment means little ability of the society to expand its productive capacity.

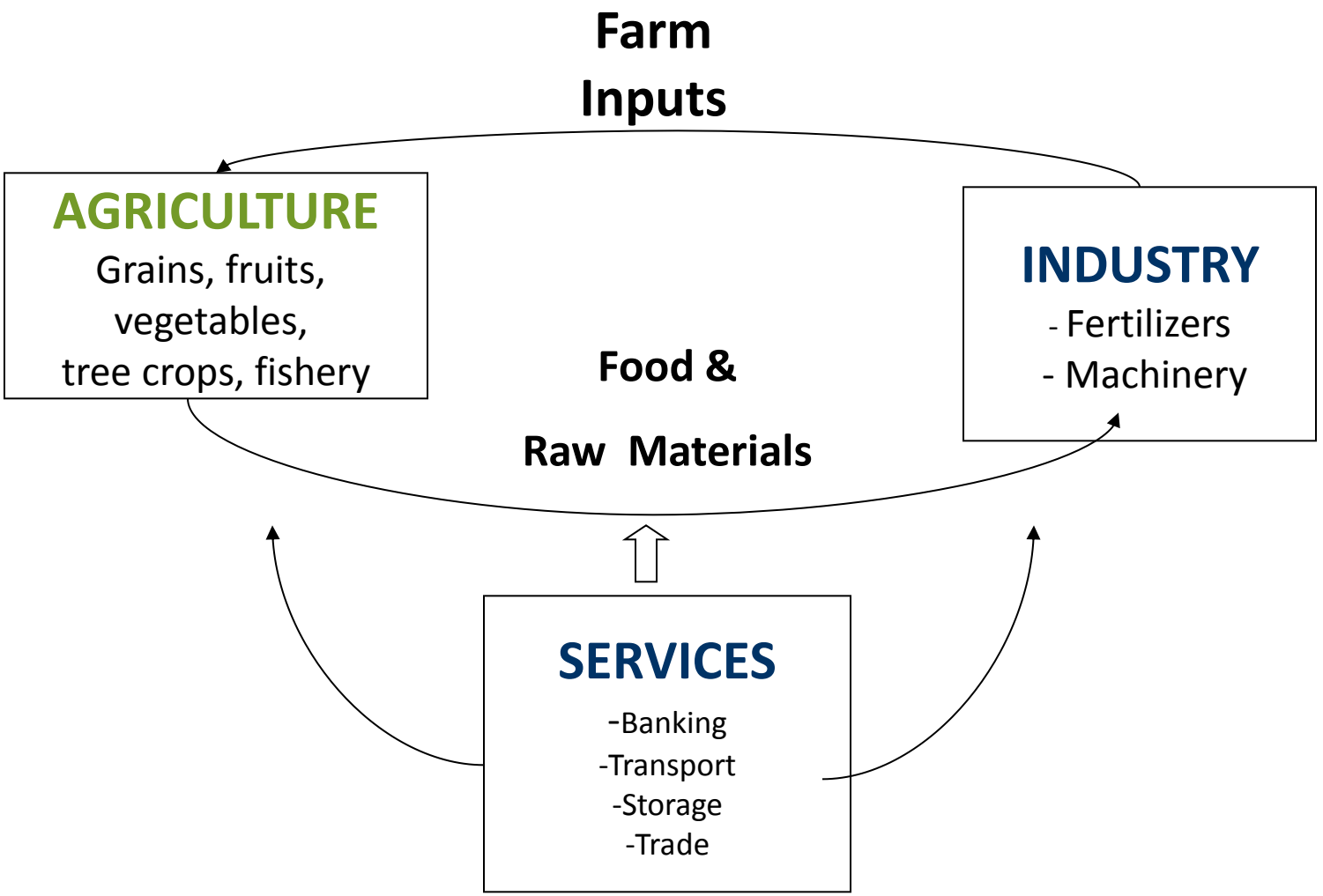
- Ragnar Nurkes, Development Economist

1907-1959

The Classic
Vicious Circle of Poverty



Agribusiness has sectoral linkages



ASEAN Global Plays
The Philippines trails

World Export Ranks: 2014 Quantities

Commodity	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Rice				2	3
Palm oil	1	2			
Coconut Oil	2	3	1		
Natural Rubber	2	4	10	1	3
Sugar				2	
Coffee, all	4				2
Cocoa (HS1803-1805)	3	5			
Banana			2		
Cassava Starch				1	2
Cashew nuts (w/out shell)					1
Pineapple, canned	3		2	1	5
Pepper	3	5			1

Source: UA&P research, UN Trademap. By actual producers (not transshipments)

Philippines' Agri Growth lags in Asia

percent a year

Country	Long Term 1986-2014	Recent 2011-2014
Philippines	2.4	2.0*
Indonesia	3.3	4.2
Malaysia	2.3	3.0
Thailand	2.4	2.6
Vietnam	3.6	3.2
China	4.4	4.2

* 1.6 percent a year during 2011-2015

Source: World Bank

Average Agriculture Growth Rates *(in percent)*

PNoy's tenure among the slowest

Country	Cory	FVR	Erap	GMA	PNoy
Philippines	2.2	2.3*	3.1**	2.8	2.0
Indonesia	4.4	1.6	2.0	3.4	4.2
Malaysia	3.3	-0.8	3.3	3.0	3.0
Thailand	4.0	-0.1	5.8	2.2	2.6
Vietnam	3.2	4.0	4.9	3.8	3.2
China	4.0	4.3	2.5	4.0	4.2

- El Nino years, 1995, 1998, 2015 , 2016, Erap's 1999 high growth was a recovery from a big drop in 1998. Average growth for Ramos era excluding the drought year of 1998.

**Actual growth for 1999-2000, adjusted for base effects was 3.1 percent a year versus 6.5 percent a year without base effects

Country	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2014
Philippines	2.7	1.5	2.7	3.6	2.1	2.0
Indonesia	5.0	2.6	1.4	3.2	3.7	4.2
Malaysia	3.1	0.1	1.8	3.2	2.7	3.0
Thailand	3.2	1.2	3.4	2.8	1.6	2.6
Vietnam	2.7	4.1	4.4	4.0	3.5	3.2
China	4.2	5.1	3.4	3.8	4.3	4.2

Source: World Bank

Productivity, 1961-2012

Phil underperforming…

Average Annual Growth Rate, %

Country	OUTPUT	INPUTS	Total Factor Productivity (TFP)
Philippines	**2.87**	**1.68**	**1.19**
Indonesia	3.73	2.42	1.32
Malaysia	4.10	1.46	2.64
Thailand	3.21	1.85	1.36
Myanmar	3.67	2.03	1.64
Vietnam	4.17	2.50	1.67
China	4.32	2.08	2.23

Output = Production

Inputs = land, labor, livestock, tractor and others, and fertilizer

http://www.ers.usda.gov/data-products/international-agricultural-productivity.aspx

Benchmarking Agri-food Exports

Philippines severely underperforms, and in deficit

ASEAN Agri-food Trade, 2014 ($B)*

Country	Exports	Imports	Balance
Indonesia	38.8	17.5	+21.3
Malaysia	26.2	18.3	+7.9
Philippines	6.7	8.6**	-1.9**
Thailand	38.4	12.9	+25.5
Vietnam	24.8	13.4	+11.4

- Harmonized System code HS 01-05 Animal and products, HS0 6-15 Vegetable products, HS 14-24 Foodstuffs, and HS 40 (natural rubber)

** understated by at least $1 B due to smuggling

Source: UN Trademap

Agri Export Scorecard, 2014

No. of products/year by earning class (HS 4 digit)

Country	Over $1 Billion	Over $500 Million - Less than $1 Billion
Philippines	2	0
Indonesia	5	5
Malaysia	4	4
Thailand	9	4
Vietnam	8	0

Note: HS – Harmonized system
Source: UN Trademap

Agri Export Scorecard, 2014

Export products/year by earning class (HS 4 digit)

Country	Over $ 1B	Over $500M - Less than $1B
PHILIPPINES	Bananas ($1.1B) Coconut oil ($1.3B)	None
INDONESIA	Palm oil ($17.5B) Natural rubber ($4.7B) Coconut and palm kernel oil ($2.5B) Shrimp ($1.8B) Coffee ($1.0B)	Cigar and Cigarettes ($805M) Margarine ($778M) Processed shrimps ($737M) Cocoa butter ($661M) Oil cake ($604M)
MALAYSIA	Palm oil ($12.0B) Vegetable oil, hydrogenated $1.9B) Natural rubber ($1.4B) Palm kernel and coconut oil ($1.0B)	Food preparations, nes ($703M) Cocoa butter ($625M) Malt extract, etc. ($694M) Bread, biscuits, pastries ($539M)
THAILAND	Natural rubber($6.0B), Rice ($5.4B) Prepared fish ($3.1B), Sugar ($2.7B) Prepared chicken($2.2B), Starch ($1.3B) Prepared shrimp ($1.2B), Animal feed($1.2B), Food preparations, nes ($1.2B)	Shrimps ($967M) Canned fruits ($928M) Non-alcoholic beverages ($906M) Condiments and sauces ($592M)
VIETNAM	Coffee beans ($3.3B), Rice ($2.9B) Shrimps ($2.6B), Fish fillet ($2.4B), Cashew nuts ($2.0B), Natural rubber ($1.7B), Prepared shrimp ($1.6B), Pepper ($1.2B)	None above $500M

Source: UN Trademap

EXPORT MARKET SHARES

The Philippines is a global player in banana, pineapple, and coconut oil

Export Market Shares (EMS)
Banana – Japan (%)

Country	2010	2015	Trend
Philippines	93.2	85.9	Down
Ecuador	4.2	10.5	Up
Guatemala	0	1.5	Up
Mexico	0.3	0.4	Up
Peru	0.7	0.4	Down
Taiwan	0.9	0.3	Down
Tonnage ('000)	1,110	960	Down

Source: UN Trademap

EMS

Banana – China (%)

Country	2010	2015	Trend
Philippines	65.7	64.0	Slightly Down
Ecuador	0.3	26.4	Up
Myanmar	26.6	5.2	Down
Thailand	1.6	2.4	Up
Vietnam	4.7	0.9	Down
Indonesia	0	0.9	Up
Tonnage (‘000)	665	1,074	Up

Source: UN Trademap

EMS

Fresh/dried Pineapples – Japan (%)

Country	2010	2015	Trend
Philippines	99.3	97.9	Slightly Down
Taiwan	0.7	0.8	Up
Others	nil	1.3	Up
Tonnage (’000)	142.6	150.6	

Source: UN Trademap

EMS

Fresh/dried Pineapples - China (%)

Country	2010	2015	Trend
Philippines	93.9	74.4	Down
Taiwan	5.0	25.5	Up
Tonnage	19,800	84,400	Up

Source: UN Trademap

EMS

Canned Pineapples - US (%)

Country	2010	2015	Trend
Thailand	44.0	45.1	Up
Philippines	30.9	28.8	Down
Indonesia	15.8	18.3	Up
Tonnage	318,412	334,119	Up

Source: UN Trademap

EMS

Crude Coconut Oil - US (%)

Country	2010	2015	Trend
Philippines	79.2	49.2	Down
Indonesia	16.6	40.3	Up
Malaysia	2.9	6.5	Up
Tonnage	344,768	250,273	Down

Source: UN Trademap

EMS

Refined Coconut Oil - US (%)

Country	2010	2015	Trend
Philippines	90.1	73.0	Down
Indonesia	6.2	22.4	Up
Tonnage	232,087	299,062	Up

Source: UN Trademap

EMS

Crude Coconut Oil – Netherlands (%)

Country	2010	2015	Trend
Philippines	86.1	81.4	Down
Indonesia	7.0	14.9	Up
PNG	5.3	3.1	Down
Tonnage	418,102	254,176	Down

Source: UN Trademap

Revealed Comparative Advantage (RCA)

- The RCA of a nation is **measured by the relative weight of a percentage of total export of commodity's in a nation over the percentage of world export in that commodity** (Balassa, 1965)
- A country reveals comparative advantages in **products for which this indicator is higher than 1**, showing that its exports of those products are more than expected on the basis of its importance in total exports of the reference area.

RCA 2012

Fish and crustaceans (HS Code 03)

Country	Global Rank	Export Value (US$ million)	Main Export	RCA
Vietnam	4	3,981	Catfish, shrimps	6.6
Thailand	10	2,844	Tuna, Shrimps	2.5
Indonesia	11	2,753	Shrimps, tuna	2.9
Malaysia	34	680	Shrimps	0.6
Philippines	41	420	Tuna	1.6
Singapore	45	291		0.1
Myanmar	47	278		6.8

Note: HS – Harmonized System

Source: UN Trademap

RCA 2012

Fruits and nuts

Country	Global Ranks	Export Value (US$ million)	Main Export	RCA
Vietnam	16	1,779	Cashew nut Dragon fruit	2.8
Thailand	21	1,228	Durian, longan, Dried fruit. mangosteen	1.0
Philippines	25	1,036	Banana, pineapple Dessicated coconut	3.8
Indonesia	40	401	Areca nuts, Dessicated coconut cashew	0.4
Malaysia	64	104	Melons, pineapple, durian, starfuit	0.1

Source: UN Trademap

RCA 2012
Vegetable Oil

Country	Global Rank	Export Value (US$ billion)	Main Export	RCA
Indonesia	1	21.3	Palm oil	19.7
Malaysia	2	19.5	Palm oil	15.1
Philippines	16	1.1	Coconut oil	3.9
Thailand	20	0.7	Palm oil	0.5
Singapore	33	0.4	Palm oil	0.2
Vietnam	51	0.2		0.3

Source: UN Trademap

RCA 2012

Meat and fish preparations

Country	Global Rank	Export Value (US$ million)	Main Export	RCA
Thailand	2	7,520	Chicken meat, Shrimp, tuna	13.1
Vietnam	11	1,068	Shrimp, tuna	3.5
Indonesia	15	843	Shrimp, tuna	1.8
Philippines	23	423	Canned tuna	3.2
Malaysia	33	208	Fish	0.4
Singapore	56	76		0.1

Source: UN Trademap

RCA 2012

Sugar and preparations

Country	Global Rank	Export Value (US$ million)	Main Export	RCA
Thailand	2	4,273	Sugar	6.9
Malaysia	32	273	Sugar	0.4
Singapore	38	236	Sugar prep	0.2
Philippines	42	209	Sugar	1.5
Indonesia	43	200	Sugar prep Molasses	0.4
Vietnam	65	153	Sugar prep Sugar	0.3

Source: UN Trademap

RCA 2012

Fruit and vegetable preparations

Country	Global Rank	Export Value (US$ million)	Main Export	RCA
Thailand	10	1,899	Canned Pineapple Preserved fruits	2.8
Philippines	22	526	Canned Pineapple fruit mix, juices	3.4
Indonesia	34	226	Cannedpineapple	0.4
Malaysia	40	170	Nuts	0.2
Vietnam	-	185	Preserved fruits and vegetables	0.4
Myanmar	72	30	Nuts	1.2

Source: UN Trademap

Chain Competitiveness Attributes

- Product Cost
- Product Quality
- Supply Reliability
- Food Safety and Traceability
- Chain Segment Efficiency and Inter-chain Balance

AGRO-INDUSTRIAL COMPETITIVENESS

When raw materials are priced below world prices:

processors are able to compete **in price-sensitive markets provided supply chains are efficient.**

Source: Agriculture, Fisheries and Forestry - Australia (AFFA)

AGRO-INDUSTRIAL COMPETITIVENESS

Where raw materials are priced at near world prices

- ✓ ***good marketing***
- ✓ ***innovative product development***
- ✓ ***a sound understanding of consumers***

are keys to compete

in value–sensitive markets

Source: AFFA

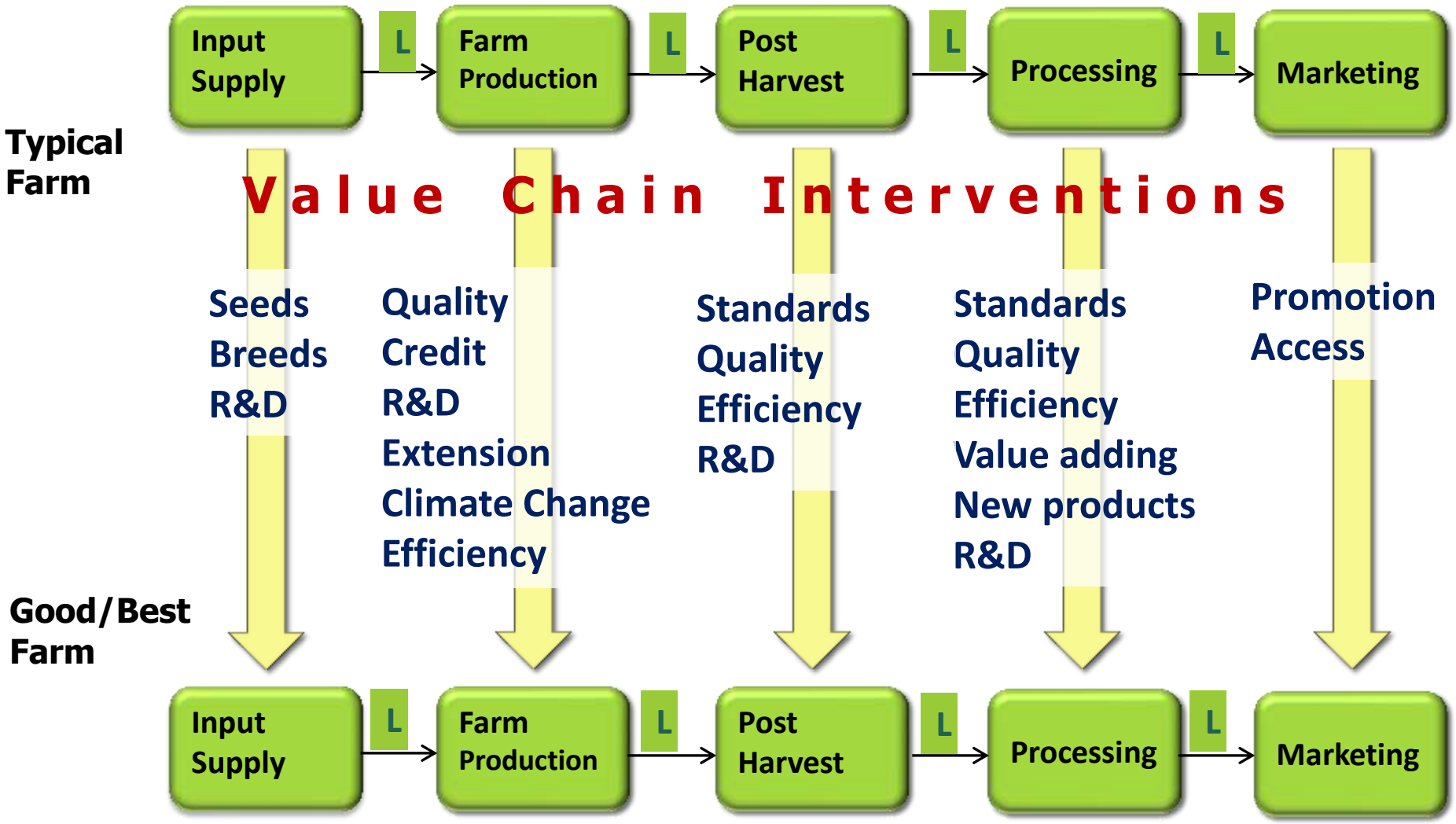
AGRO-INDUSTRIAL COMPETITIVENESS

Where the **prices of raw materials are higher** than those of competitors:

tough to develop products for the export.

Source: AFFA

CHAIN INTERVENTIONS FOR COMPETITIVENESS



Note: L - logistics

Agri development and poverty reduction are not rocket science

FARM LEVEL	AGRO-INDUSTRY
Increasing productivity	More food and raw materials for industry
Diversifying the base	More products to process Diversify exports
Value adding	More off-farm and non-farm jobs

”History suggests the ***necessity of productivity increases in smallholder agriculture.***

….. there are virtually no examples of mass poverty reduction since 1700 that did not ***start with sharp rises*** *in employment and self-employment* ***income*** *due to* ***higher productivity*** *in* ***small family farms****.”*

- TS Jayne et al., 2010

RICE SUBSECTOR

Comparative Performance of Rice Benchmark and Typical Farms

- ✓ Productivity
- ✓ Production Cost
- ✓ Net Farm Incomes
- ✓ Subsistence Carrying Capacity Ratio
- ✓ Value Addition in the Supply Value Chain

Performance Indicators Across the 12 Major Rice Producing Provinces

Item	Cagayan		Isabela		Nueva Ecija		Pampanga		Pangasinan		Occidental Mindoro	
	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms
Yield (mt/ha)	4.0	6.4	4.1	6.7	4.5	9.4	3.8	5.7	3.6	7.4	4.3	6.6
Farm production cost (P/kg)	13.51	8.27	11.90	7.08	13.53	7.17	13.10	7.89	14.82	7.03	13.52	7.17
Net farm income (P/kg)	3.67	12.79	4.92	13.38	4.49	13.83	4.34	13.44	3.32	15.02	4.56	11.97
Economic carrying capacity ratio*	0.38	3.21	0.71	3.13	0.78	4.62	0.80	3.03	0.40	4.74	1.01	2.55

Item	Camarines Sur		Iloilo		Leyte		Bukidnon		Davao del Sur		South Cotabato	
	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms	PSA-BAS Survey of Typical Farms	SIKAP / STRIVE Survey of Benchmark Farms
Yield (mt/ha)	2.6	6.2	2.7	4.8	2.7	4.6	3.7	6.7	5.0	6.6	3.6	6.4
Farm production cost (P/kg)	14.08	8.03	13.55	10.62	15.25	9.22	14.28	7.82	13.69	6.93	11.64	6.97
Net farm income (P/kg)	2.09	9.51	0.96	8.18	0.48	7.86	2.65	11.79	4.95	13.44	6.10	13.28
Economic carrying capacity ratio*	0.22	1.86	0.12	1.28	0.13	1.14	0.46	2.33	0.87	3.28	0.56	2.50

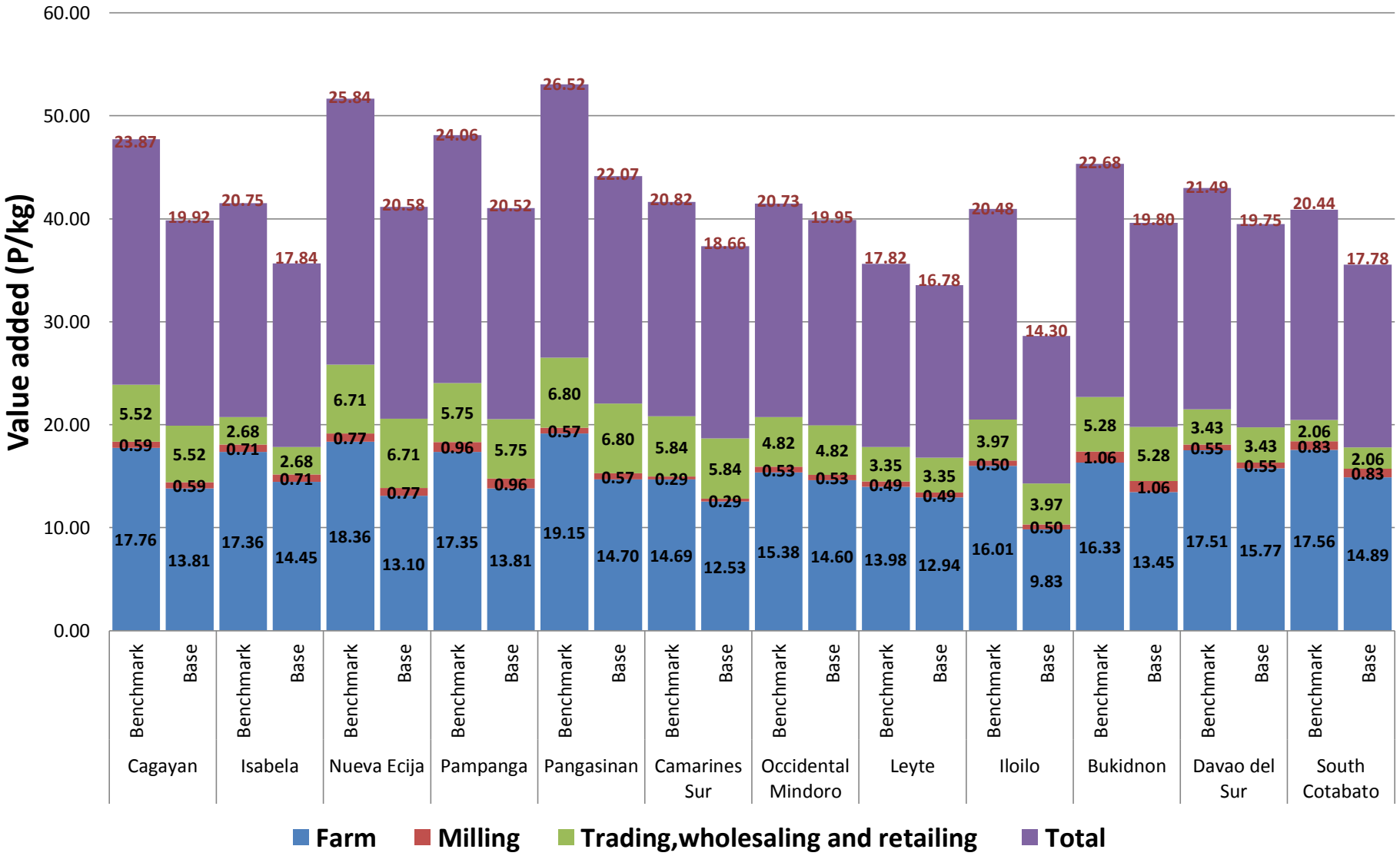
* CC ratios - >1, =1, <1 indicate that HH incomes are higher, equal, and less than food thresholds, respectively.

Source: SIKAP/STRIVE, Inc. 2015

Rice Supply Value Chain Analysis

- ✓ From farm to table along the rice supply chain, the results showed that benchmark farms generated higher gross value added than typical farms.
- ✓ The major contributing factor to this advantage was the superiority of benchmark farms than typical farms in "farm level value adding" due to technical innovations.

Value Added of Top Performing and Typical Farms



Source: SIKAP/STRIVE, Inc. 2015

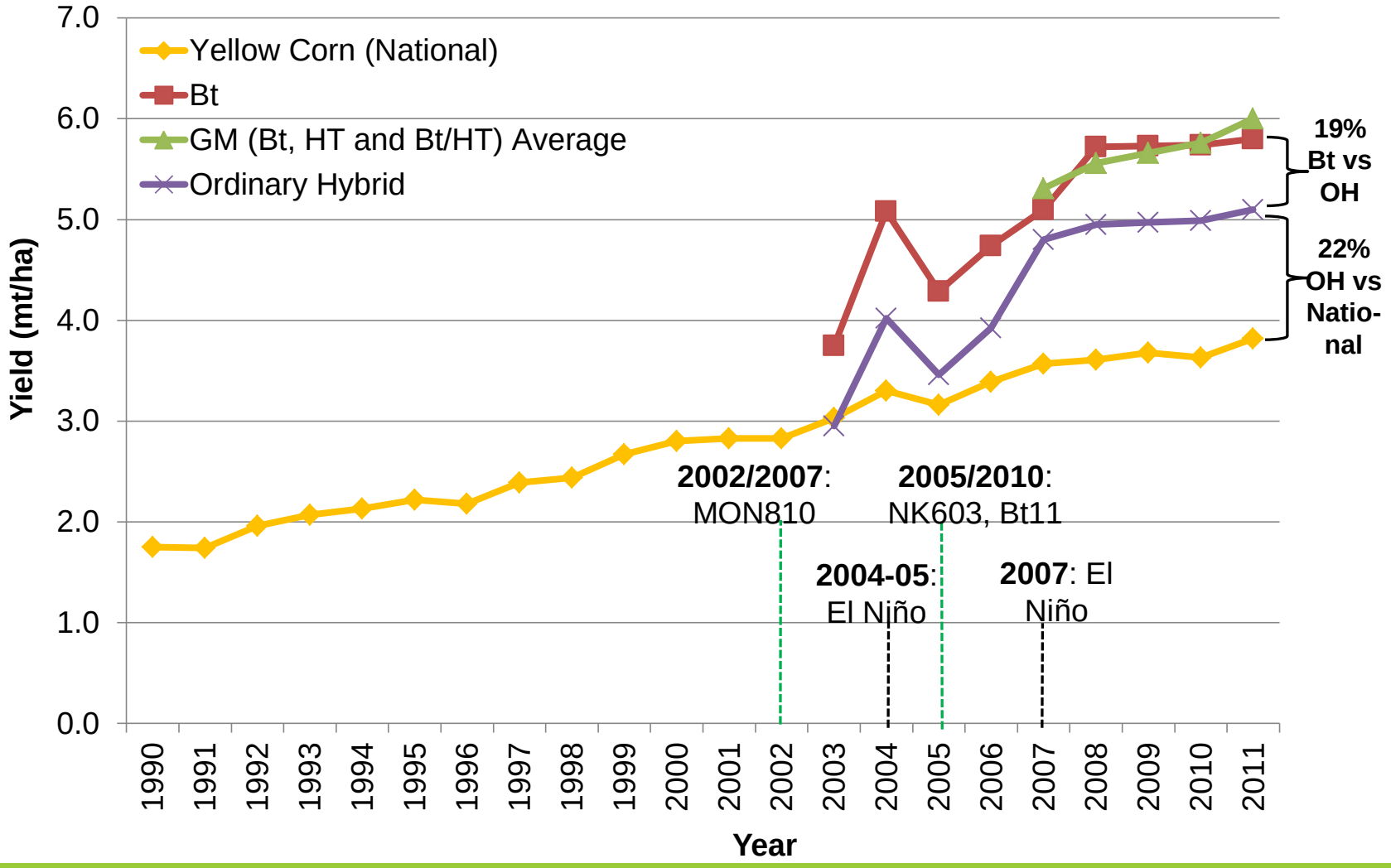
CORN SUBSECTOR

Comparative Performance of Benchmark GM Corn and Ordinary Hybrid (OH)

- ✓ Productivity
- ✓ Cost Efficiency
- ✓ Net Farm Income
- ✓ Subsistence Carrying Capacity Ratio

Productivity Performance

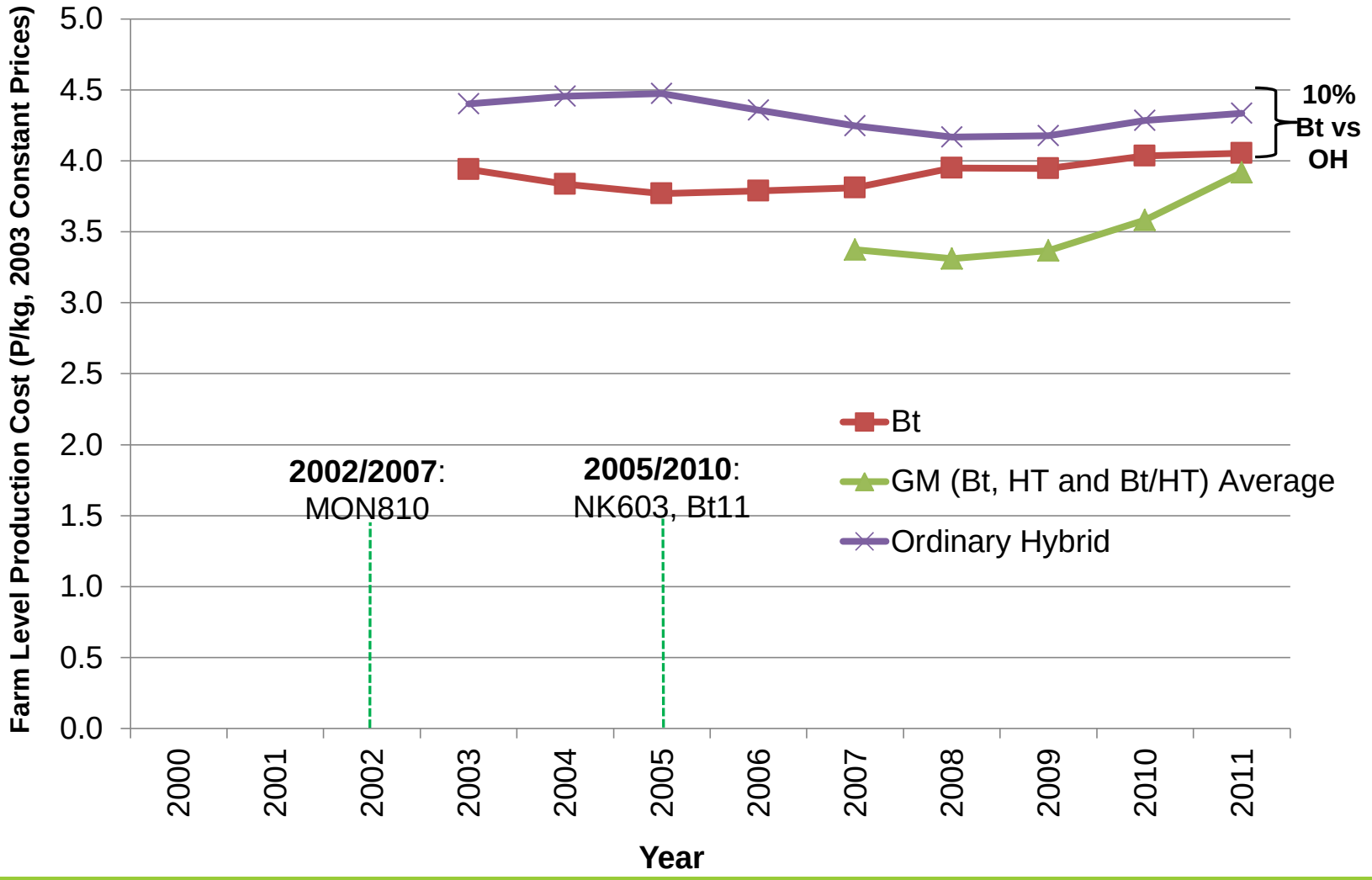
✓ **Bt Corn out performed Ordinary Hybrid (OH) by 19% from 2003 to 2011**



Source: SIKAP/STRIVE, Inc. 2015

Cost Performance

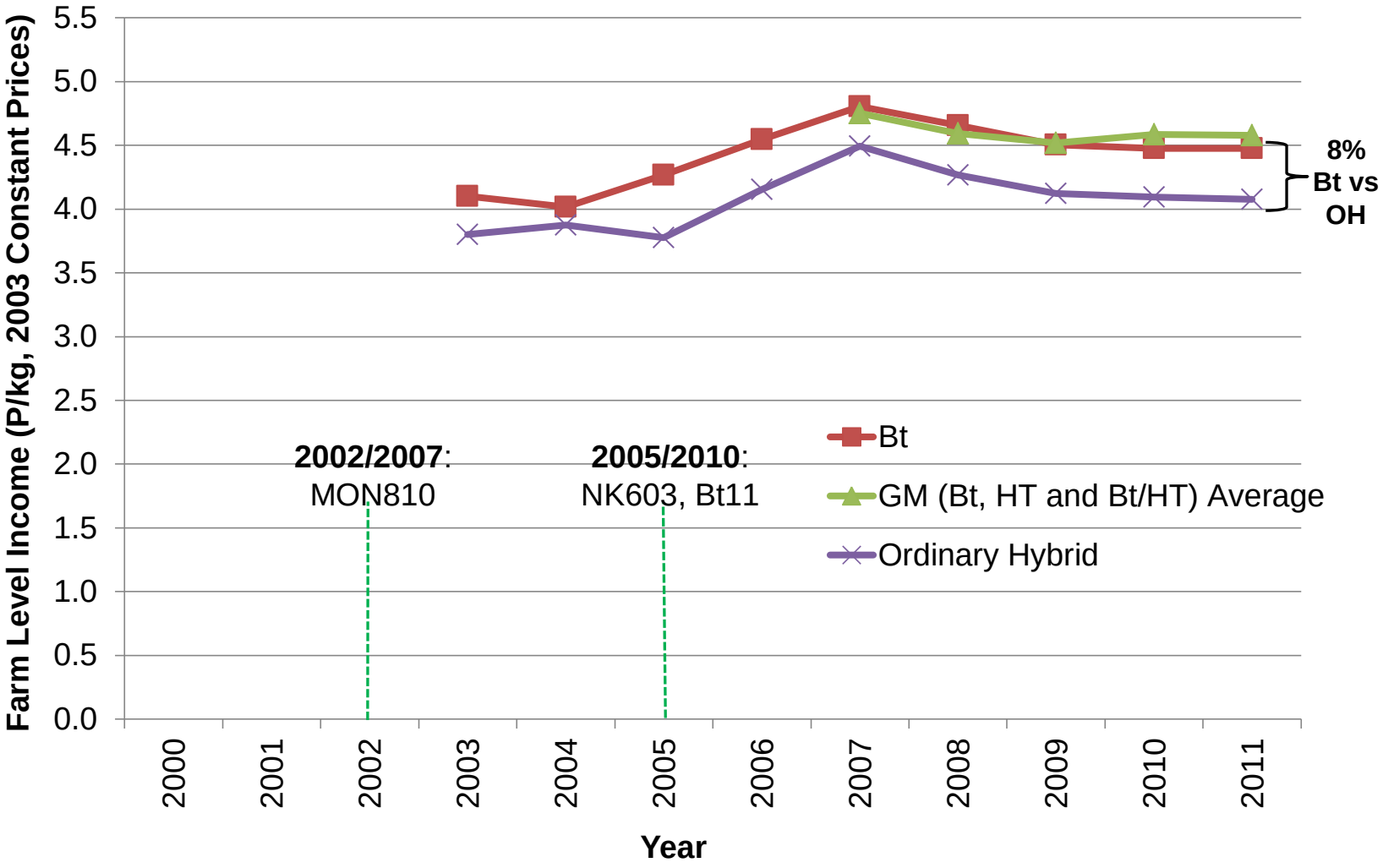
✓ **Bt Corn had lower production cost of 10% than OH**



Source: SIKAP/STRIVE, Inc. 2015

Income Performance

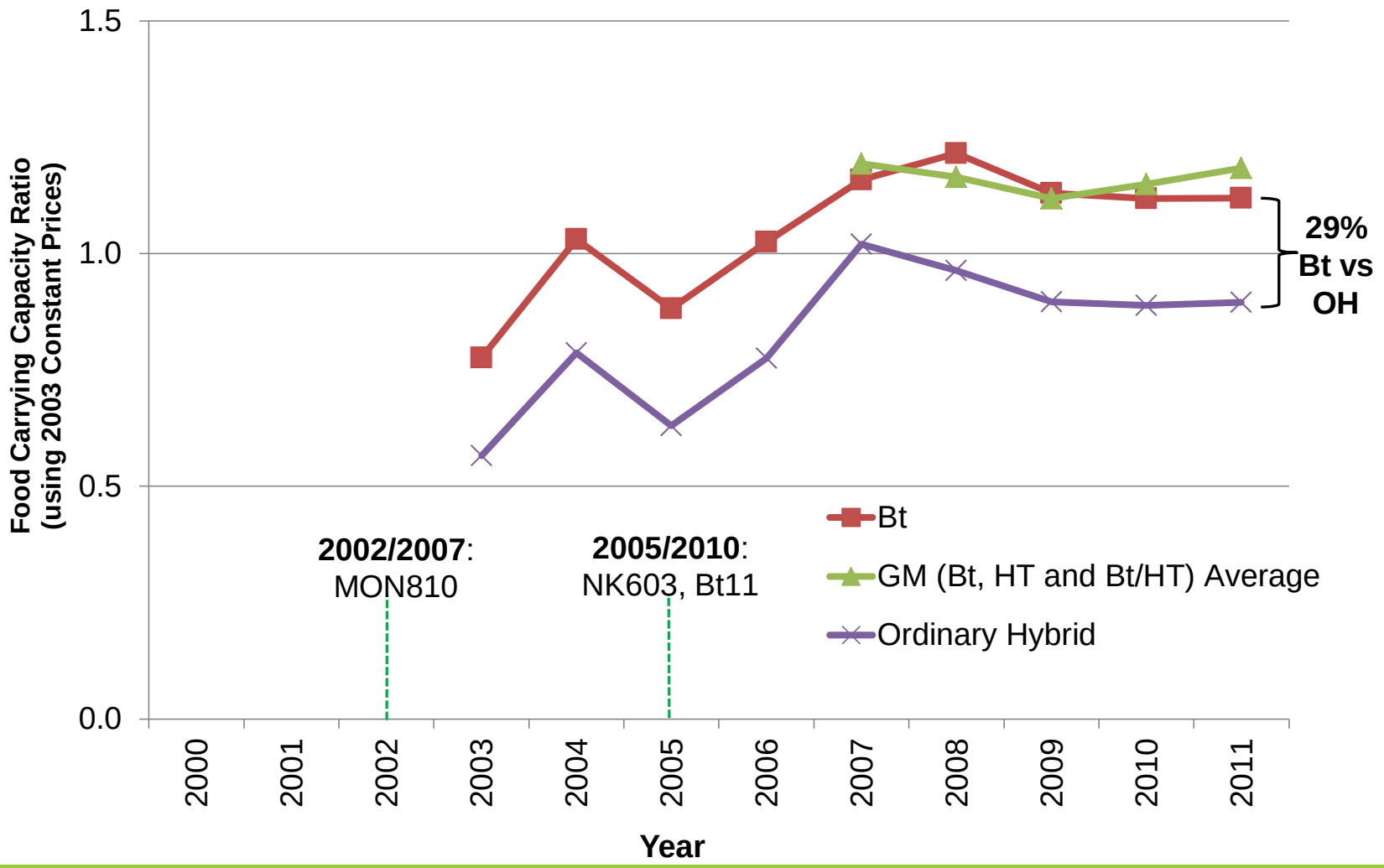
✓ **Bt Corn showed 8% superiority in terms of Net Income than OH**



Source: SIKAP/STRIVE, Inc. 2015

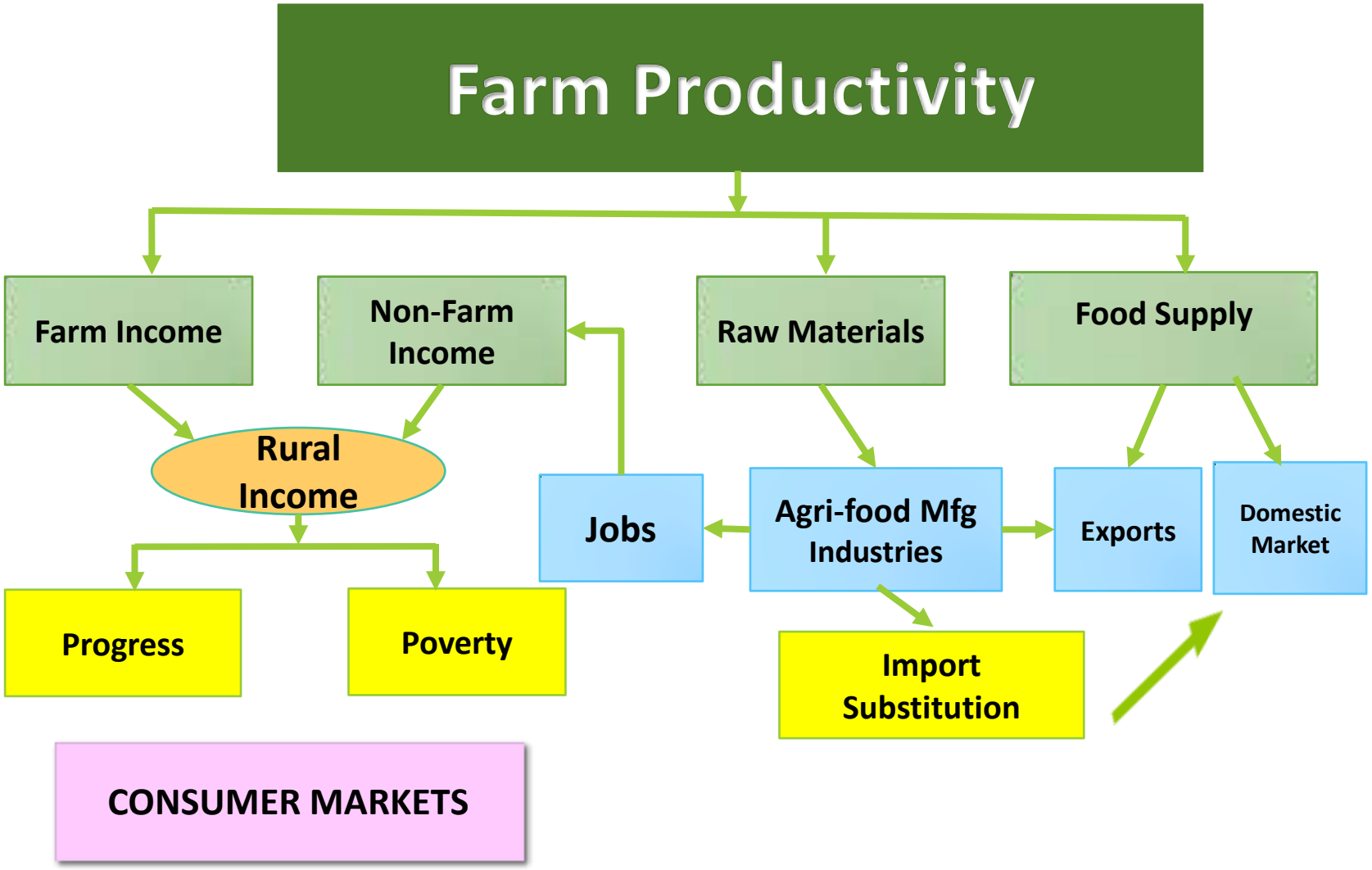
Carrying Capacity Ratio to Cover Food Thresholds

✓ **Bt Corn had higher (29%) carrying capacity ratio than OH**



Source: SIKAP/STRIVE, Inc. 2015

Productivity and Linkages



Conclusion

- ✓ **Inclusive Growth** to eradicate poverty and attain food security is still an **"illusive dream"**
- ✓ A competitive and market-oriented agriculture is central to realize this dream
- ✓ A framework that embodies the enabling mechanisms of Modernizing and Industrializing Philippine Agriculture is ***the first step…***

THANK YOU!!!