

# Expectation From A Seed Association On The Impact Of PVP In ASEAN



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# ASEAN Community (AC)

**In 2003, ASEAN (Association of South East Asia Nations) announced its intention to create an ASEAN Community based upon three pillars:**

**ASEAN Political-Security Community (APSC),**

**ASEAN Economic Community (AEC) and  
ASEAN Socio-Cultural Community (ASCC).**

**In 2007, ASEAN decided to accelerate the establishment of the AC to 2015 instead of 2020.**

# ASEAN Economic Community (AEC)

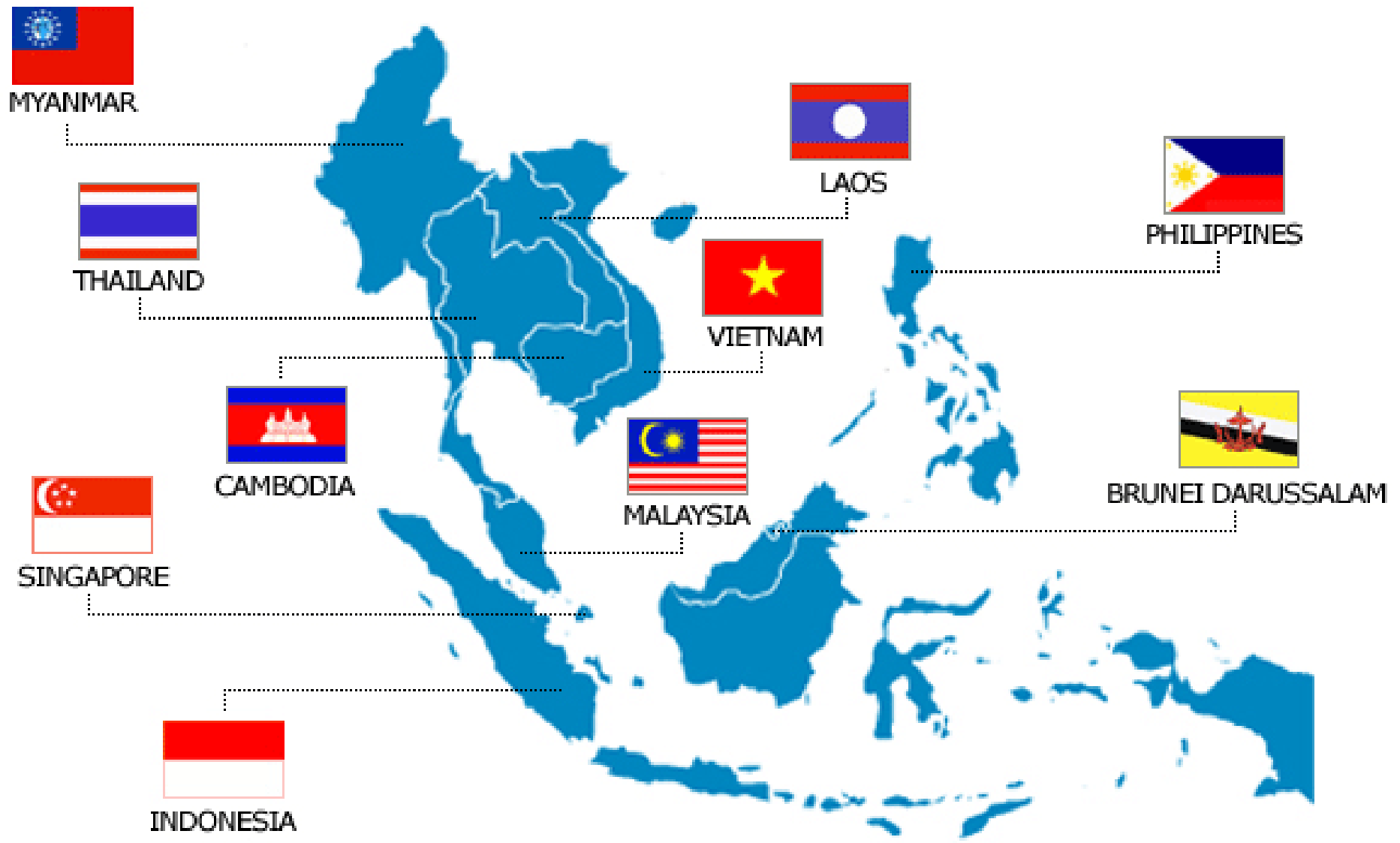
The mission of the AEC (ASEAN Economic Community) is to develop “a single market and production base” that is stable, prosperous, highly competitive and economically integrated with effective facilitation for trade and investment in which there is free flow of goods, services, investment, skilled labours, and freer flow of capital.

# **Current Situation of Crop Production in ASEAN Countries**

- **ASEAN Community will have 600 million people soon**
- **Majority of people in AC is engaged in agriculture**
- **Several ASEAN members are the major producers & suppliers of crop products and seeds to the world markets**

# ASEAN

## Major World Producers and Suppliers of Many Crops





# Food Crops



**Mungbean**



**Rice**



**Maize**



**Sugarcane**



**Cassava**



# Oil Crops



Oil palm



Soybean



Groundnut



Sesame



# Vegetables



Chillies



Chillies



Sweet pepper



Tomatos



Eggplant





# Cucurbit Vegetables





# Tropical Fruits



Lichee



Pineapple



Mangos



Dragon Fruit



Rambutan



Marian plum



Longan



# Mangosteen, Banana, Pomelo & Durian





# Flowers



Dendrobium



Rose



Chrysanthemum



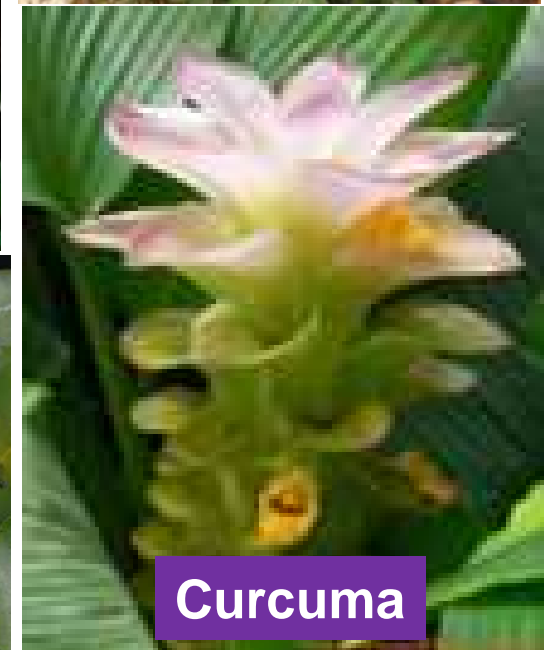
Plumeria



Adenium



Nymphaeaceae



Curcuma



**ASEAN is also the major producer and supplier of seed of many crops to the world markets**







# Corn Seed Production





# Vegetable Seed Production





# Vegetable Seed Production





## **Current Situation of Crop Production in ASEAN Countries**

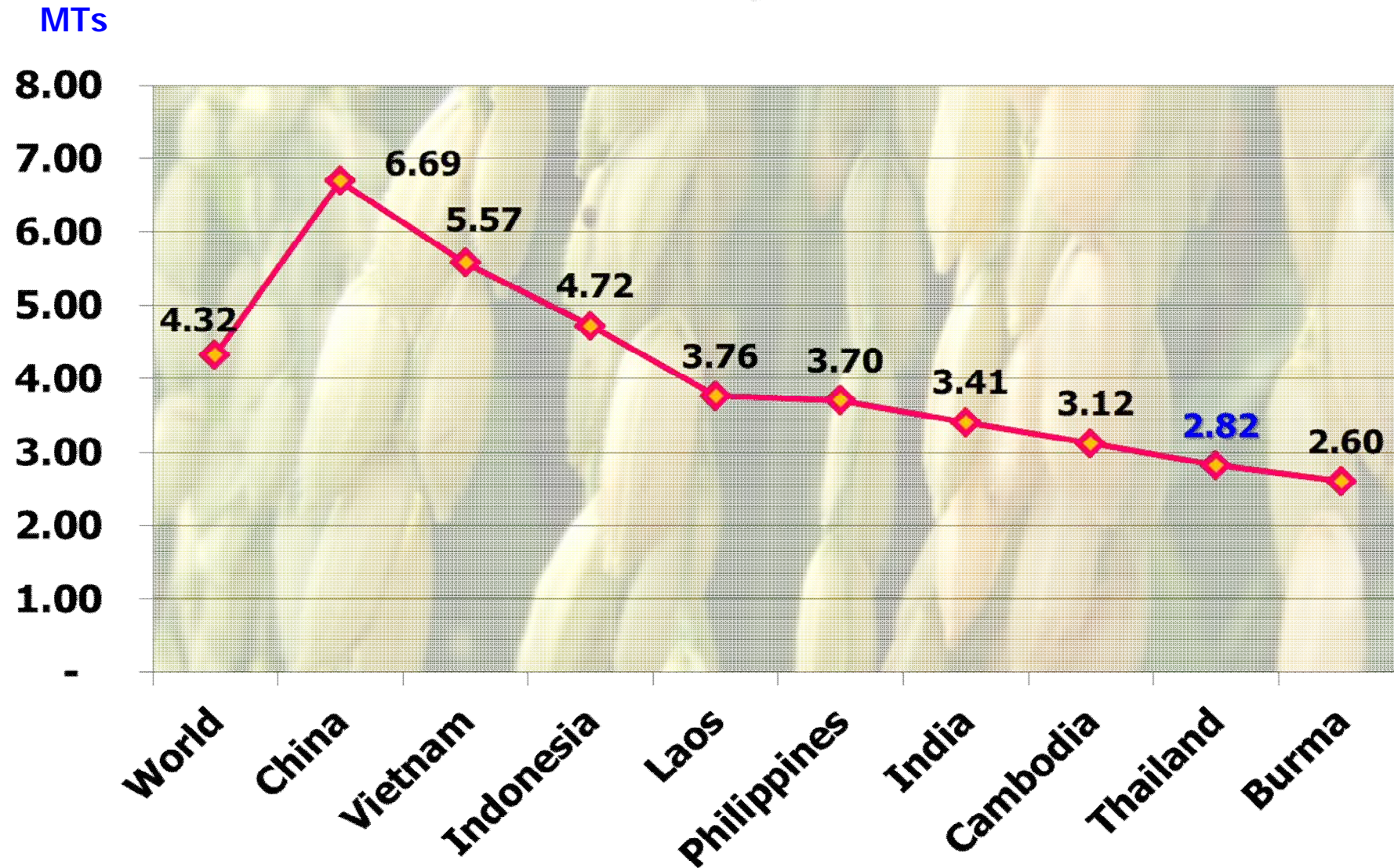
- Productivity and quality of many important crops are still low**
- High proportion of farm-saved-seed of old or public varieties is still used in many crops**

## Rice: area harvested, yield and production (2010)

Country	Area (1,000 ha)	Seed Use ( ton)	Good seed use (%)	Yield (ton/ha)	Production (1,000 ton )
Indonesia	13,244	600,000	?	5.01	66,412
Thailand	10,990	672,000	20	2.88	31,597
Myanmar	8,052	833,000	?	4.12	33,205
Vietnam	7,514	1,199,670	?	5.32	39,989
Philippines	4,354	215,000	?	3.62	15,772
Cambodia	2,777	163,140	?	2.97	8,245
Laos	870	180,360	?	3.46	3,006
Malaysia	674	19,539	?	3.78	2,548
Brunei	1	69,240	?	1.27	1

()=official data | \*=Unofficial | Im=FAO data based on imputation methodology | FAO  
FAOSTAT | @statistics Division | 24/05/2012

# Rice Yield per Hectare 2011/12



Source: USDA

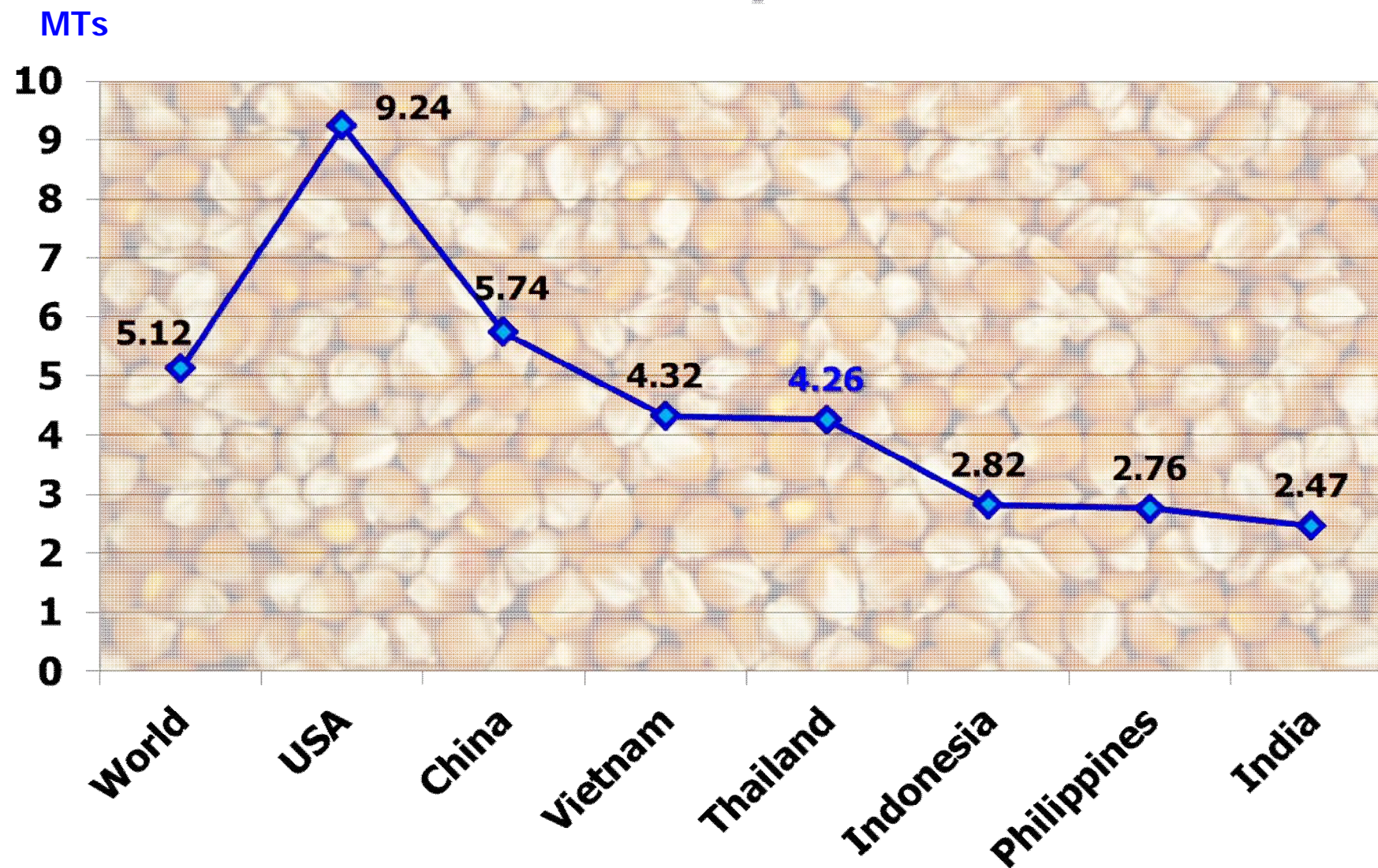


## Corn: harvested area, yield and production (2011/12)

Country	Area (1,000 ha)	Seed Use (1,000 ton)	Hybrid use (%)	Yield (ton/ha)	Production (1,000 ton )
Indonesia	3.08	57,750	52	2.82	8.70
Philippines	2.59	48,563	37	2.76	7.14
Vietnam	1.25	23,438	64	4.32	5.40
Thailand	1.01	18,938	99	4.26	4.30
Myanmar	0.36	4,000	?		1.08
Cambodia	0.17	1,800	?		
Laos	0.05	1,083	?		
Malaysia					
Singapore					
Brunei					

Source: USDA/Pacific Seeds (Thai)

# Corn Yield per Hectare 2011/12

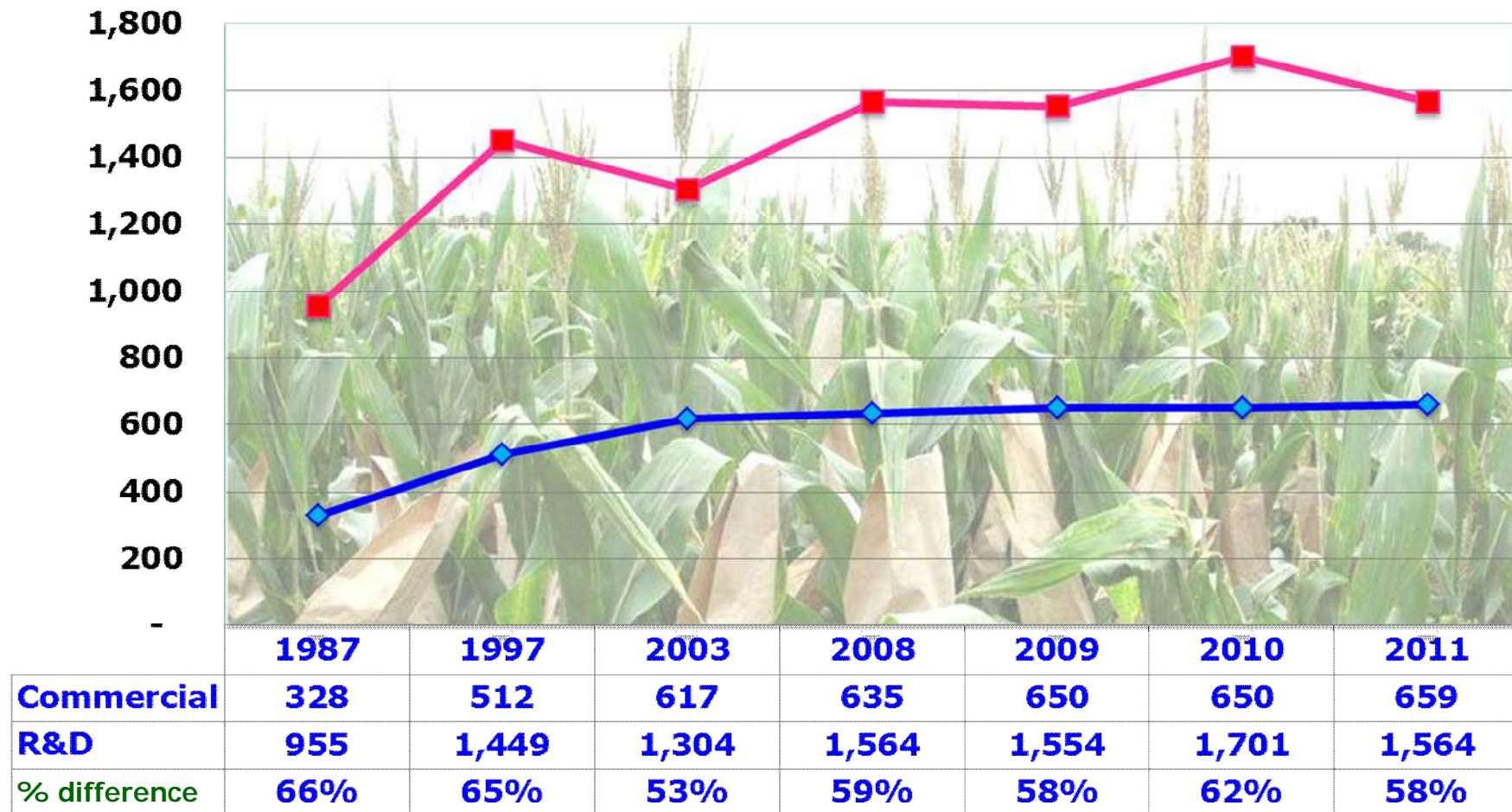


Source: USDA



# Field Corn Yield Progress

## R&D vs Commercial



◆ Commercial ■ R&D

# Major Constraints for Crop Production

- Limited supplies of new and better varieties (OPVs & Hybrids)
- Limited supplies of good quality seed & propagating materials
- Development of new varieties in many important crops depends largely on public breeding programs
- Lack of effective legal system to attract private companies to participate in seed industry



# Commercial Seed



# Roles of Public & Private Sectors in Varietal Development

Crop	Public organization		Private organization	
	MOAC, MOST	University & college	Company	Independent breeder & farmer
<b>Field crops (OPV)</b> Rice, legume crops, cassava, sugarcane, etc.	+++	++	+	+
<b>Field crops (F1)</b> Field corn, sweet corn, baby corn, sorghum, sunflower, etc.	+	+	+++	+
<b>Forage crops (F1, OPV)</b> Forage grasses & legumes	++	++	++	+
<b>Industrial crops (F1, OPV)</b> Oil palm, rubber, coconut, pineapple, eucalyptus etc.	+++	+	+++	+

Notes: MOAC = Ministry of Agriculture and Cooperatives, MOST = Ministry of Science and Technology,

F1 = F1 hybrid, OPV = Open – Pollinated Variety, +++ = High, ++ = Moderate, + = Low



# Roles of Public & Private Sectors in Varietal Development

Crop	Public organization		Private organization	
	MOAC, MOST	University & college	Company	Independent breeder & farmer
<b>Fruits (F1, OPV)</b> Papaya, citrus, dragon fruit, mango, durian, jack fruit, longan, tamarind, etc.	++	+	++	+++
<b>Vegetables (F1, OPV)</b> Tomato, watermelon, pepper, cucumber, convolvulus, etc.	+	+	+++	++
<b>Flowers (F1, OPV)</b> Orchids, curcuma, marigold, petunia, Vinca, Zinnia, Adenium, Plumeria, etc.	+	+	+++	+++

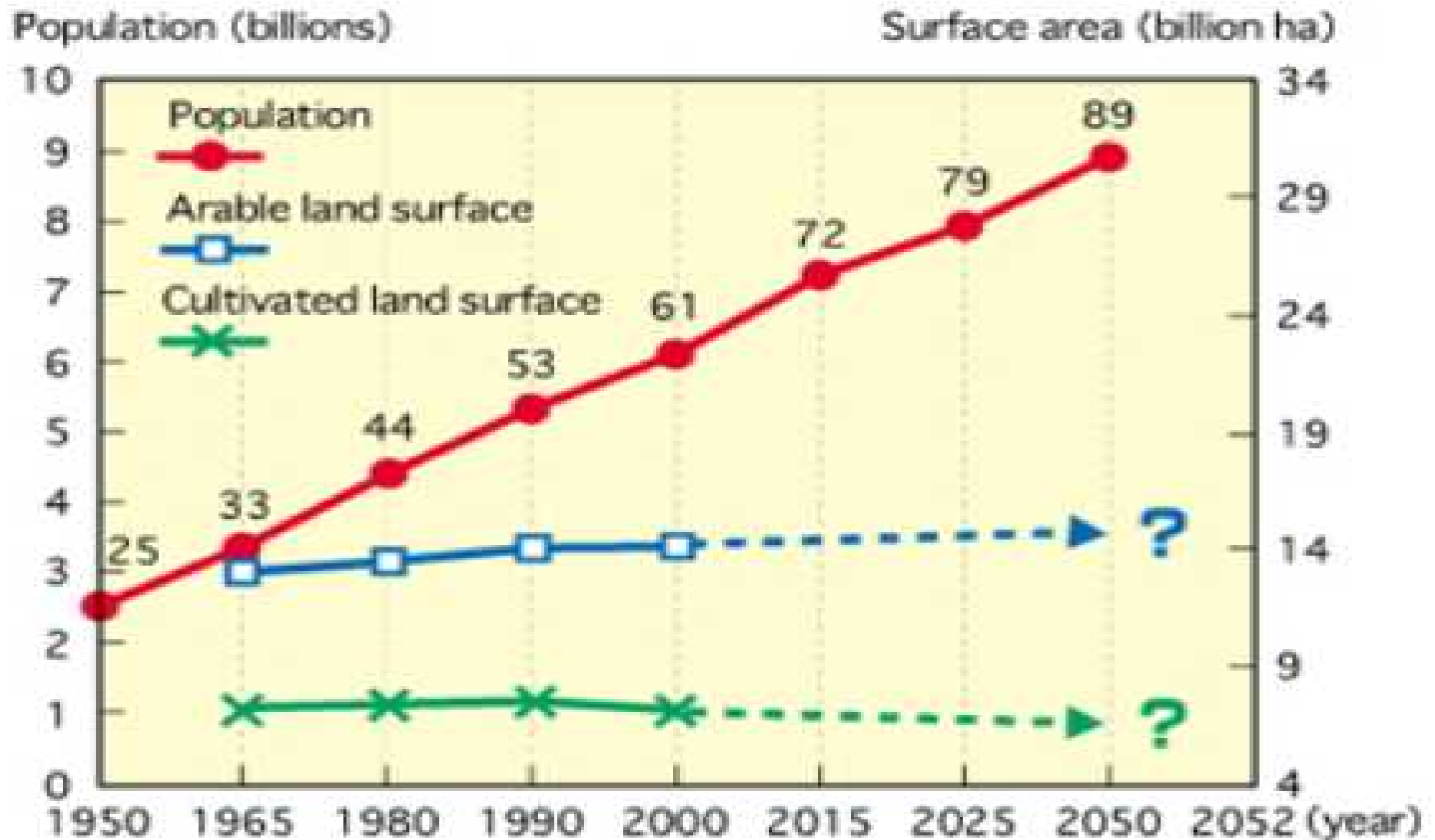
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# How to Increase Crop Production ?

- Expand production areas
- Improve productivity
  - Use better genetics/varieties
  - Use better quality of seed/propagating materials
  - Use better crop management
- Attract private sector to develop new crop varieties and to produce good quality seed – good opportunity from AEC's goal to become “a single market and production base”
- Establish an effective PVP system



# Is it possible to expand production area?



**World Population and Arable and Cultivated Land Surface Area**

[http://www.sos2006.jp/english/rsbs\\_summary\\_e/2-4-food-and-water.html](http://www.sos2006.jp/english/rsbs_summary_e/2-4-food-and-water.html)

**Members of UPOV (green) & initiating States & organizations (brown)**



(UPOV:TWF43, Beijing ,2012)



# Status of PVP Laws in ASEAN Countries



**Brunei**

**?**



**Cambodia**

**?**



**Indonesia**

**Laws of Republic of Indonesia  
No. 29 of 2000**



**Laos**

**?**



**Malaysia**

**Protection of New Plant Varieties Act  
2004**

# Status of PVP Laws in ASEAN Countries



**Myanmar**      ?



**Philippines**      **Philippine Plant Variety Protection Act of 2002**



**Singapore**      **Plant Varieties Protection Act (Conform to UPOV 1991 Act)**



**Thailand**      **Plant Variety Protection Act B.E. 2542 (1999)**



**Vietnam**      **Seed Ordinance No. 15/2004/PL-UBTVQH11 (Conform to UPOV 1991 Act)**



# Expected Impact of PVP on Seed Industry in AEC

- Germplasm flow for plant breeders
- New technologies for breeding and seed production
- Faster development of new crop varieties to meet demands from 6 Fs (Foods, Feeds, Fiber, Fruits, Flora, and Fuel)
- Economy of scale for seed business resulted from AEC's goal
  - “A Single Market and Production Base”
- Increase SMEs and farmer producers for contract seed production

## Expected Impact of PVP on Seed Industry in AEC

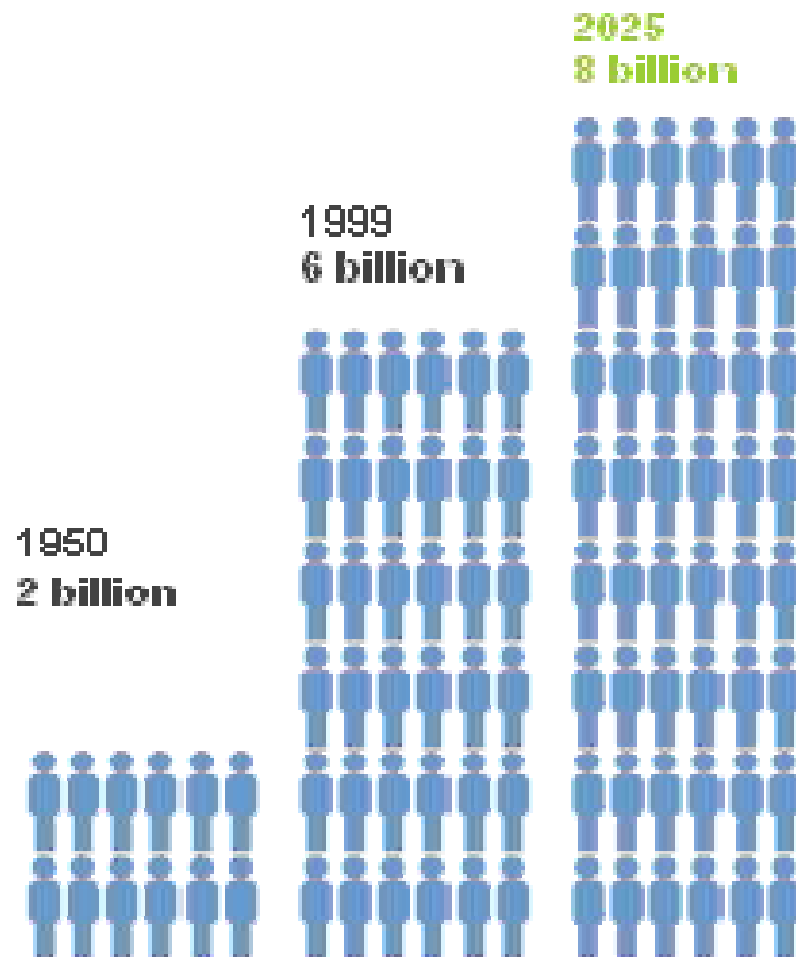
- **Farmers' choices for suitable crops and varieties**
- **Sufficient supplies of raw materials for middle and downstream industries**
- **Food security – regional and global**
- **Bio-energy security – regional and global**
- **Less dependence on fossil energy**



# Major Challenges for Crop Production:

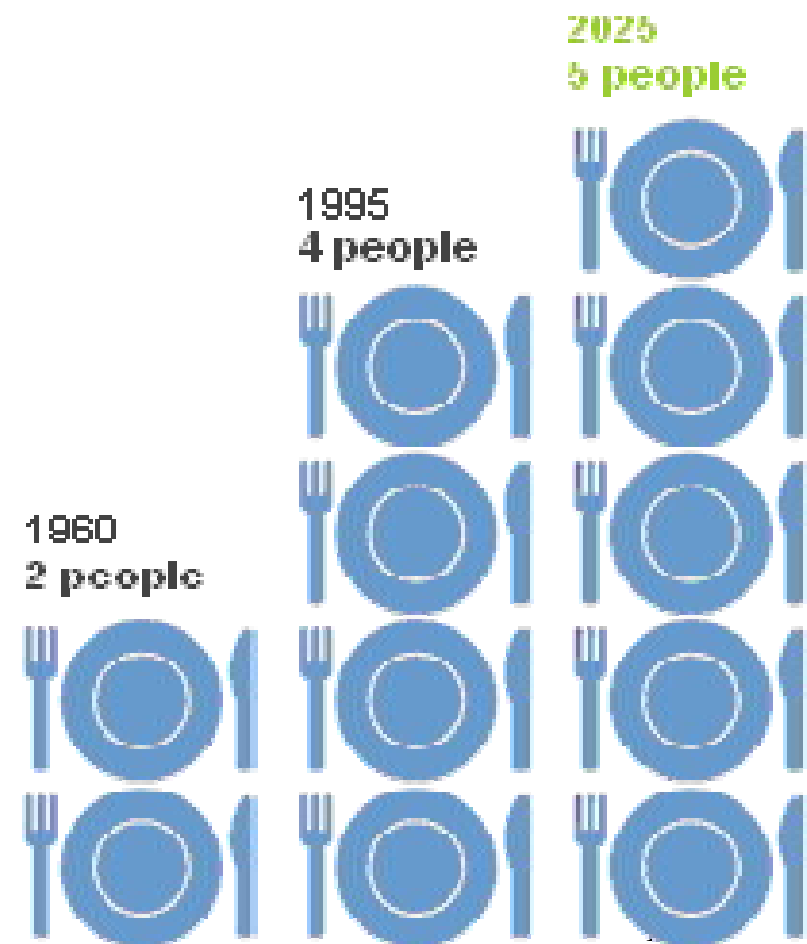
Increasing demand from population growth

## World population



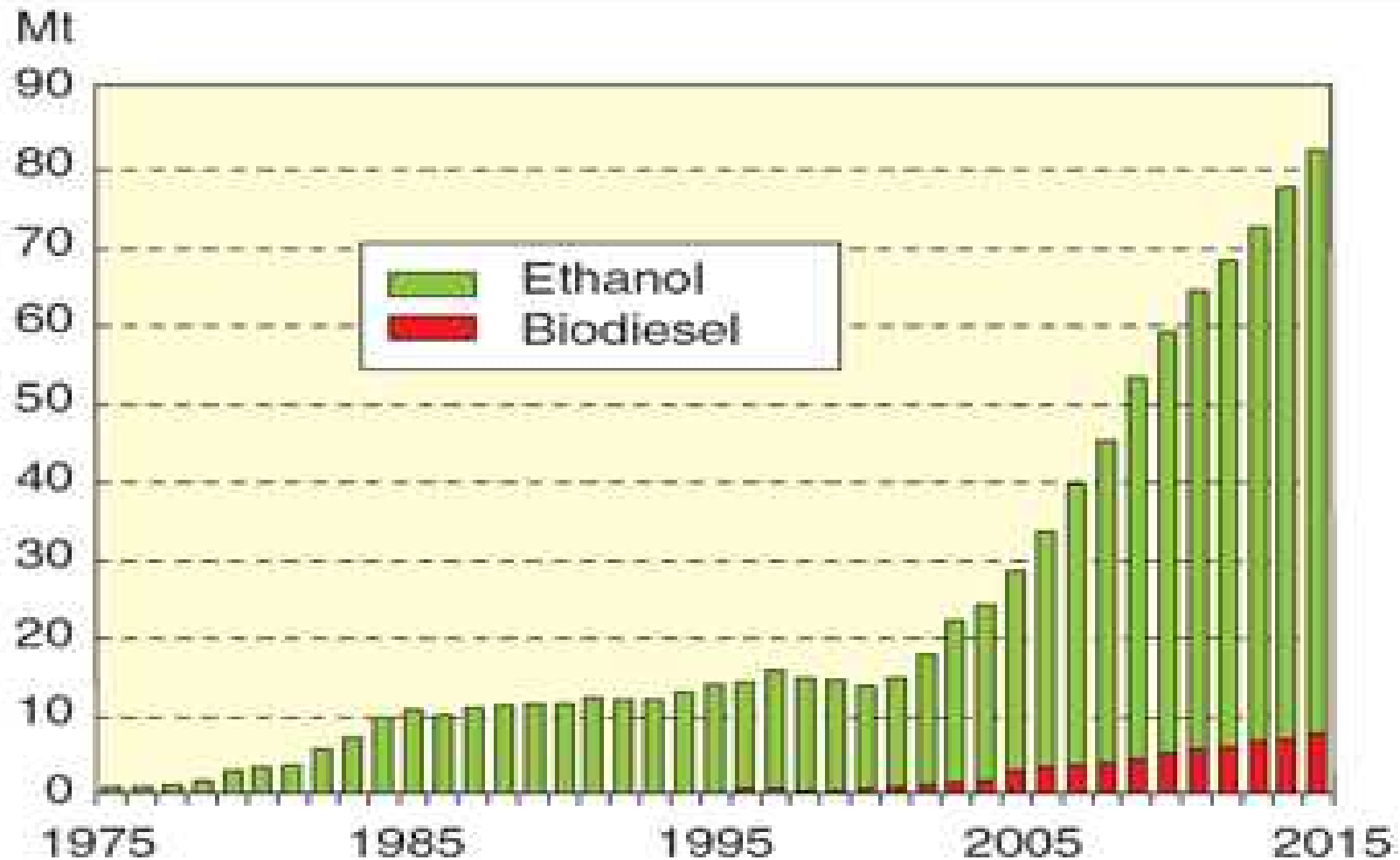
Source: FAO, World Bank statistics

## People fed per hectare



# Major Challenges for Crop Production:

## New demand from production of biofuels



Source: F.O. Licht, Christoph Berg, presentation made at World Biofuels 2006, Seville, May 2006

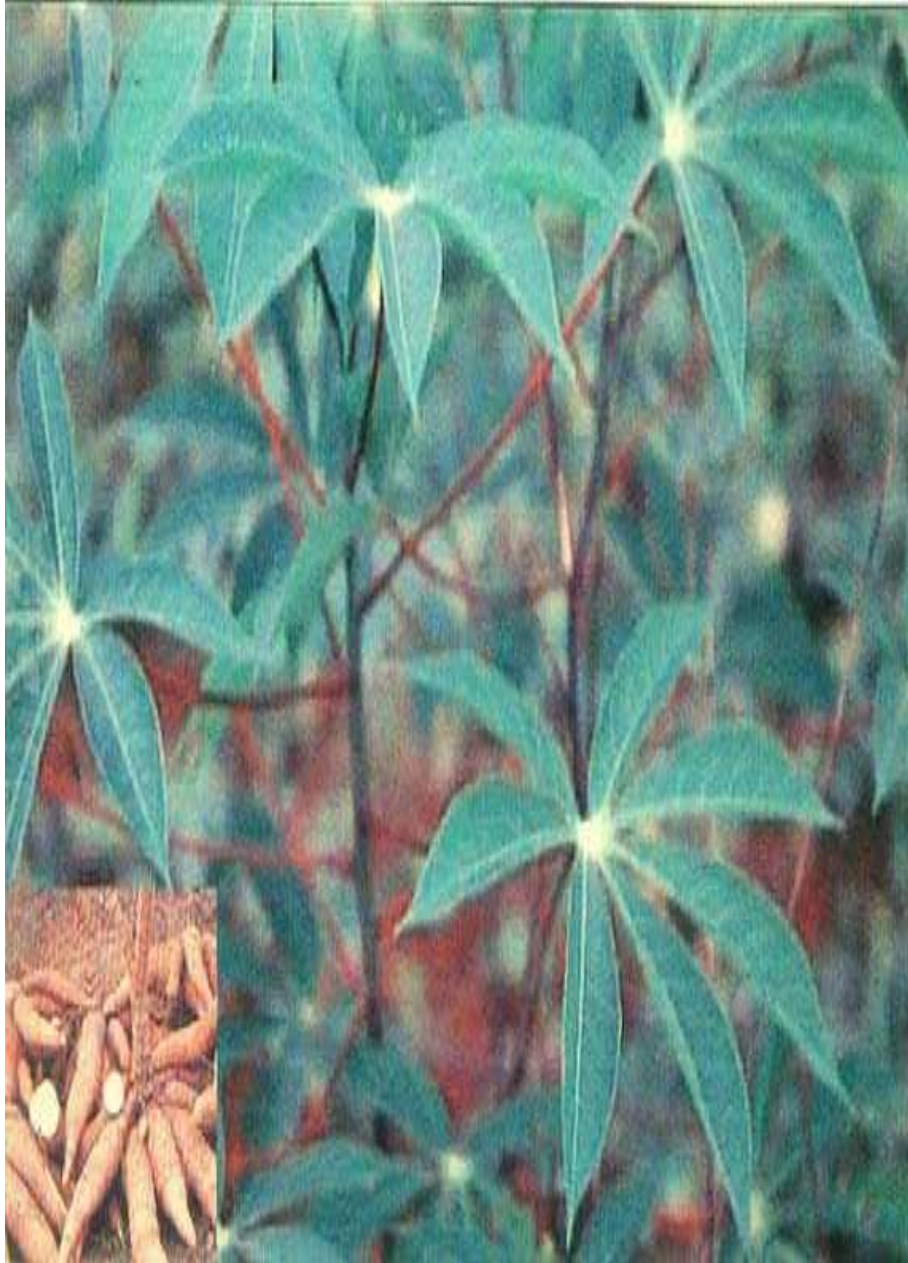


# Oil Palm & Products





# Cassava & Products



แป้งมัน TAPIOCA STARCH



สาकुเม็ดใหญ่  
LARGE SAGO FORM



สาकुเม็ดเล็ก  
SMALL SAGO FORM



สาकुเม็ดเล็กใบเตย  
SMALL PANDON SAGO FORM



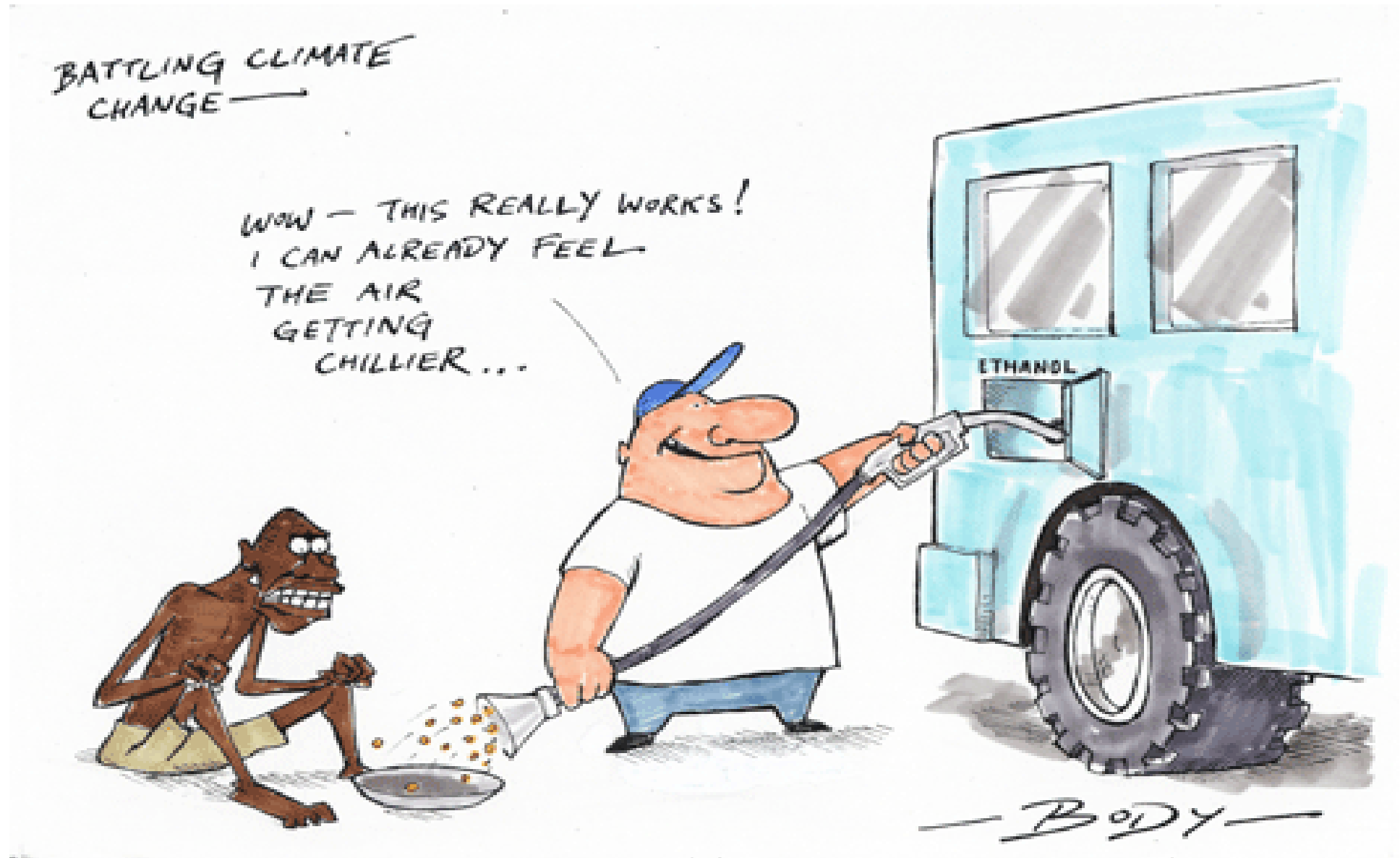
สาकुเม็ดจิ๋ว  
SMALLEST SAGO FORM



# Sugarcane & Products



# How to balance between needs for foods and biofuel?





# When and how to make it happens in ASEAN?

## Harmonization of PVP Laws & Regulations to result in “A Single Market and PVP System”



“One Vision, One Identity, One Community”