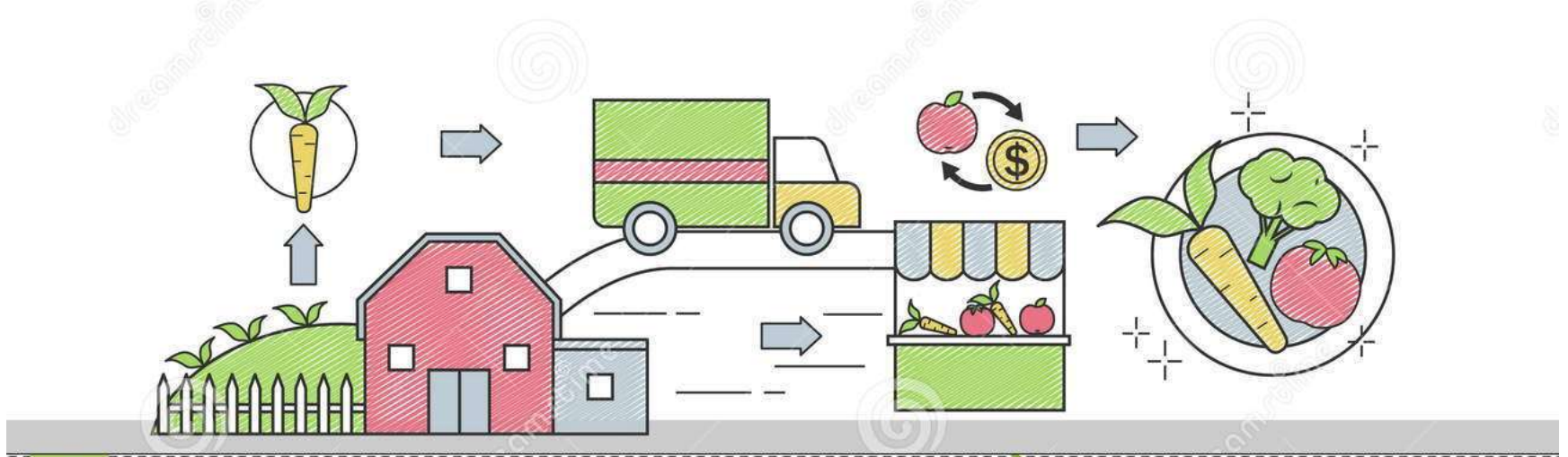


Role of Plant Science Technology in Supporting the Agricultural Economy: Safe & Secure Food.

FARM TO FORK



CropLife Asia: Our vision

A region where productive food and agricultural systems – enabled through **innovative crop science and technologies** – contribute to improving **food security** and the living standards of all in an **economically, socially and environmentally sustainable manner.**

FARM TO FORK



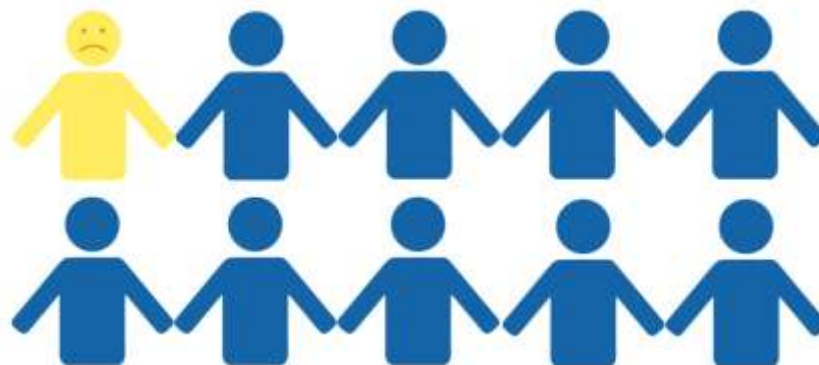
KIWI NGÔ MAI TRANG

QUÁN QUÂN VUA ĐẦU BẾP
NGƯỜI NỔI TIẾNG 2017



-
- Sữa, trứng và thịt xông khói đến từ đâu?
Một trong ba thanh niên không biết
 - Khảo sát: Giới trẻ Anh (từ 16 đến 23 tuổi)
 - Where do milk, eggs and bacon come from? One in three youths don't know
 - Survey: UK Young Adults (6 to 23-year-old)

nghĩ



nghĩ trứng đến từ LÚA MÌ

8%



thịt xông khói đến từ ngô
bacon comes from corn



2%



thịt xông khói đến từ ngô



50%

Không biết bơ đến từ một con bò sữa

Does not know butter came from a dairy cow





không biết trứng đến từ gà mái

do not know eggs come from Chicken



One in five said that
jam or marmalade
came from cereal
products.

Một phần năm nói rằng mứt hoặc mứt cam đến từ cây ngũ cốc.

Cereals are the grains



Rice



Wheat



Maize



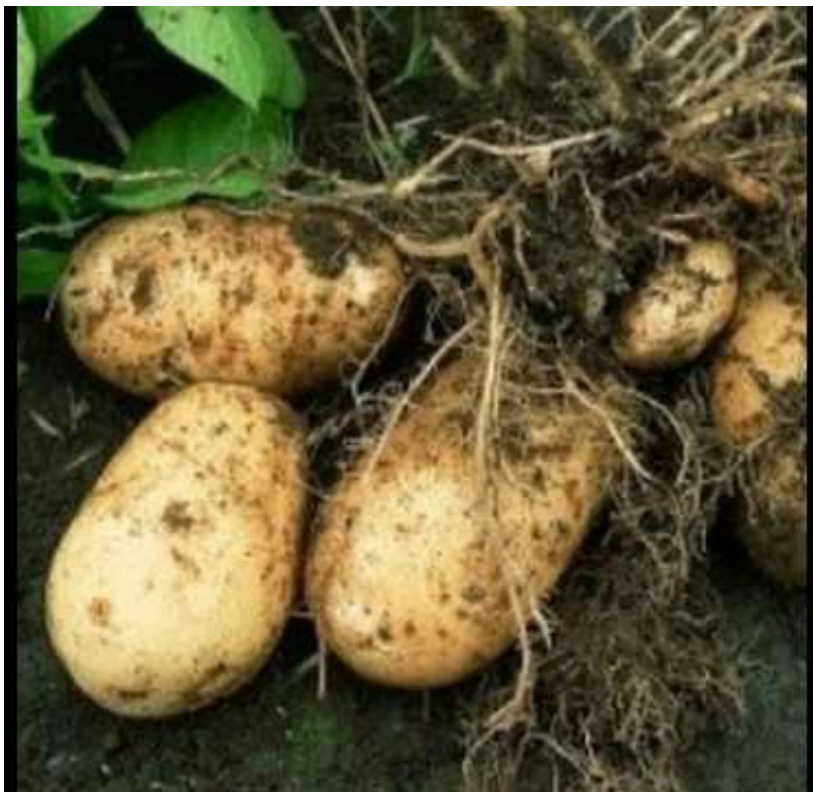
Barley



JAM



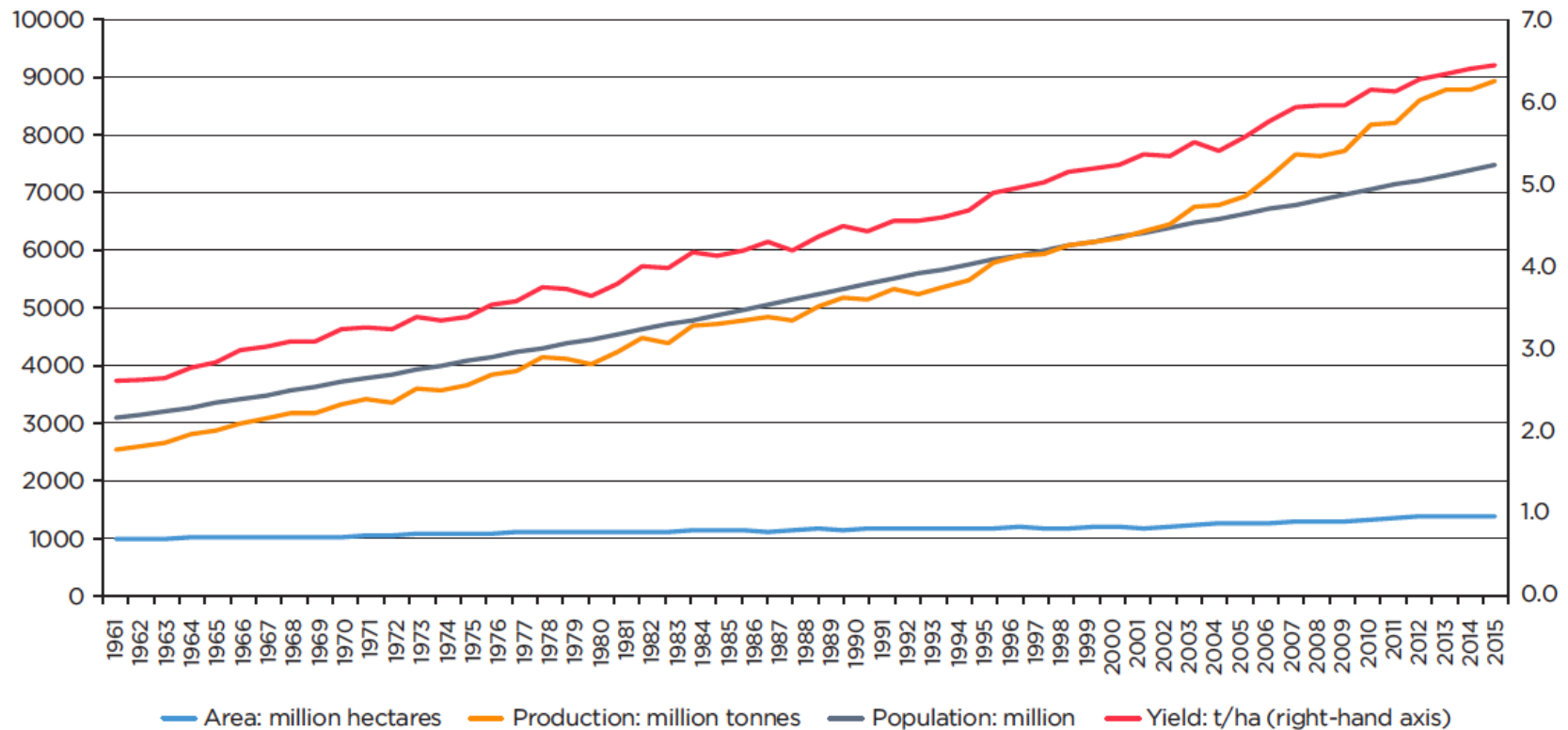
MARMALADE



10%

suy nghĩ mất ít hơn
một tháng để phát
triển.

Growth in population, Crop production, Crop areas and yields 1960-2016



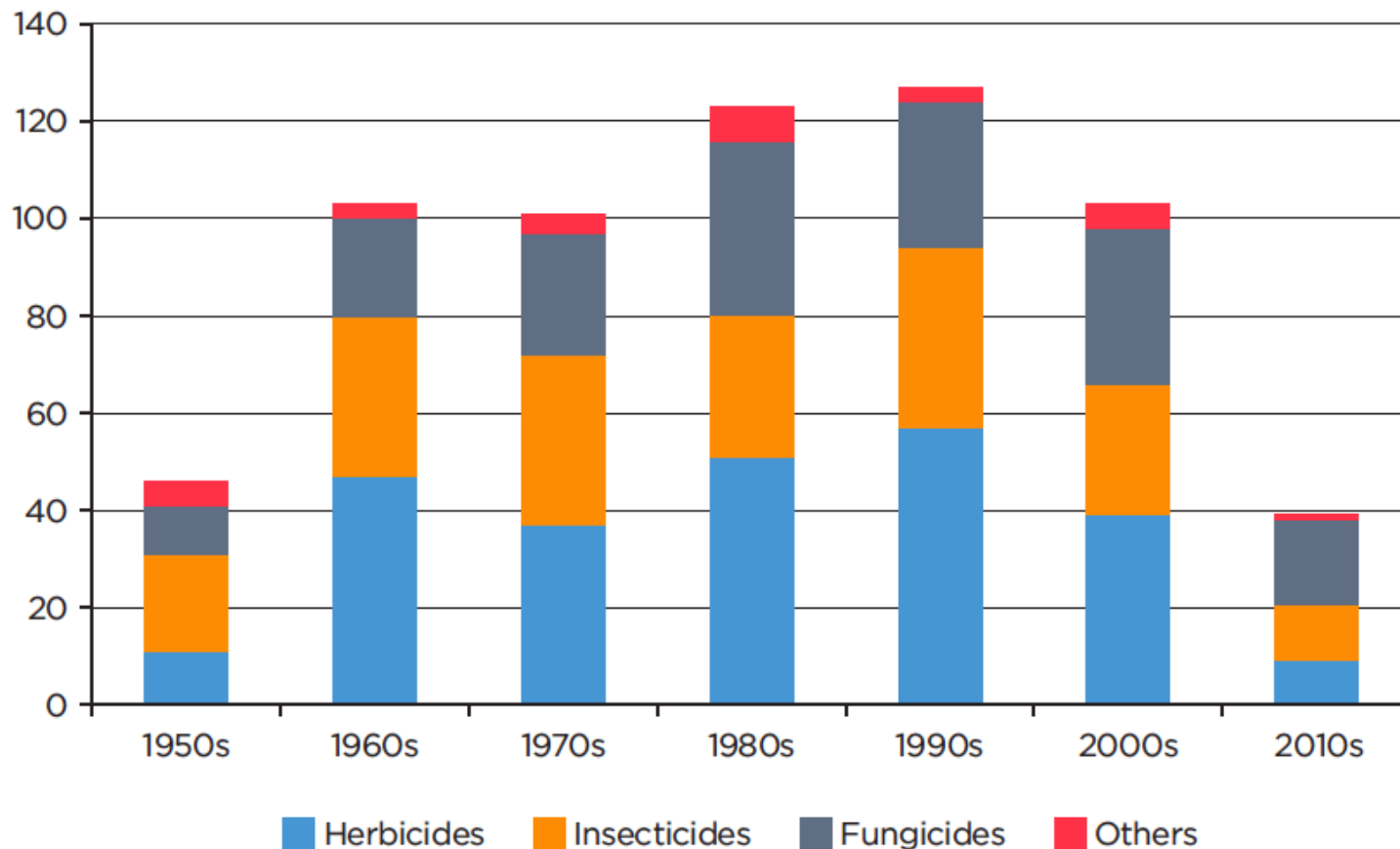
Source: FAOStat and Phillips McDougall analysis

Weed are notorious yield reducers that are in many situations economically more harmful that insects, fungi and other pests

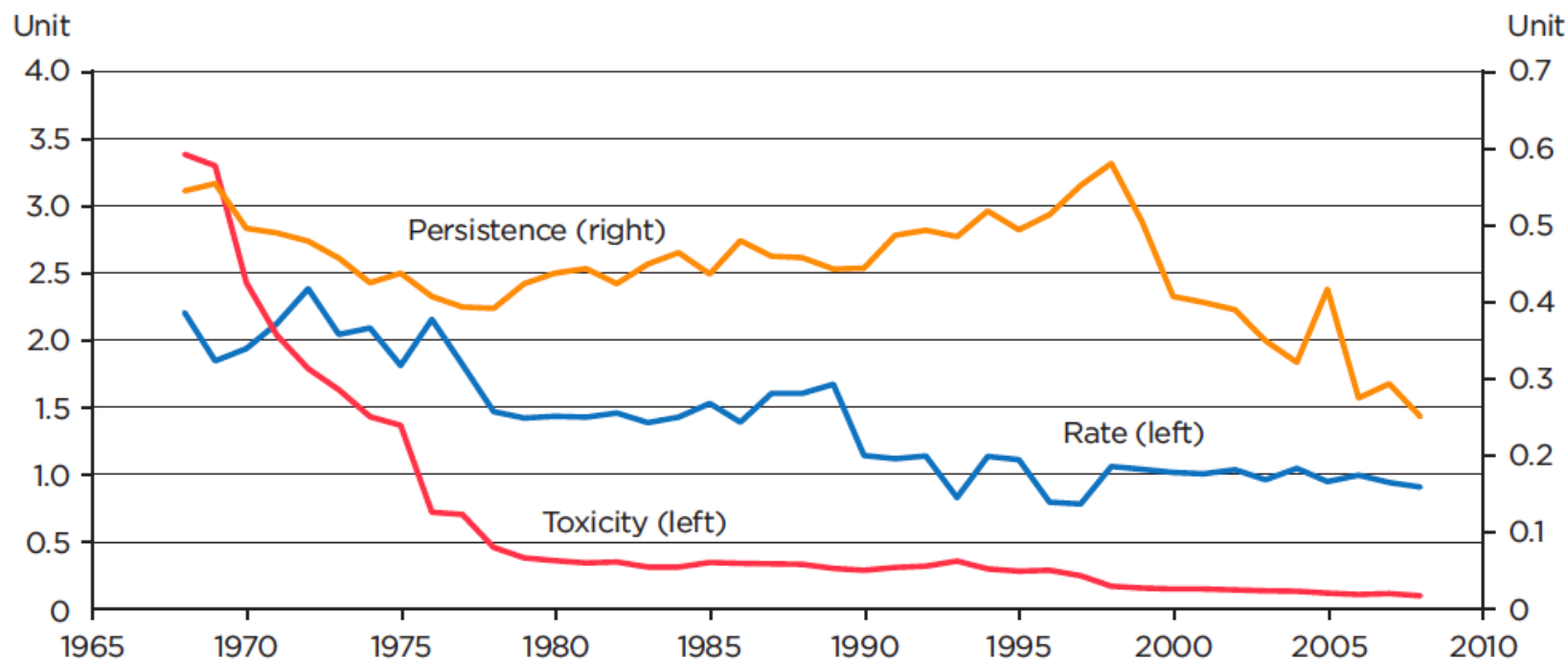


Data from 1581 field trials in 18 states in India

Number of new active ingredients introduced per decade: 1950s to present day



Average Quality Characteristics of Pesticides Applied To Four Major US Crops, 1968-2008



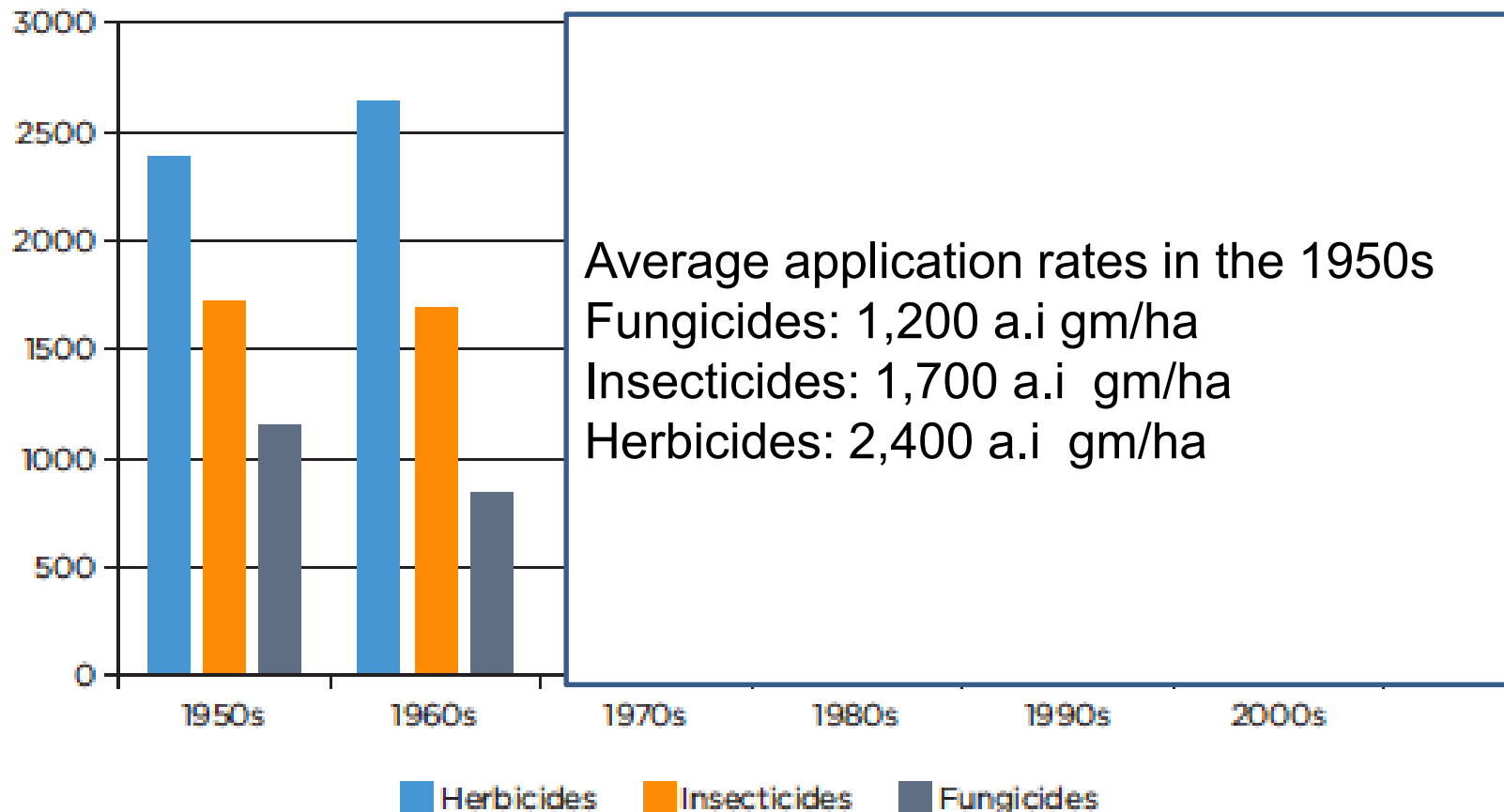
Source: Fernandez-Cornejo et al. (2014)

Notes: **Rate** is pounds of active ingredient applied per acre times the number of applications per year

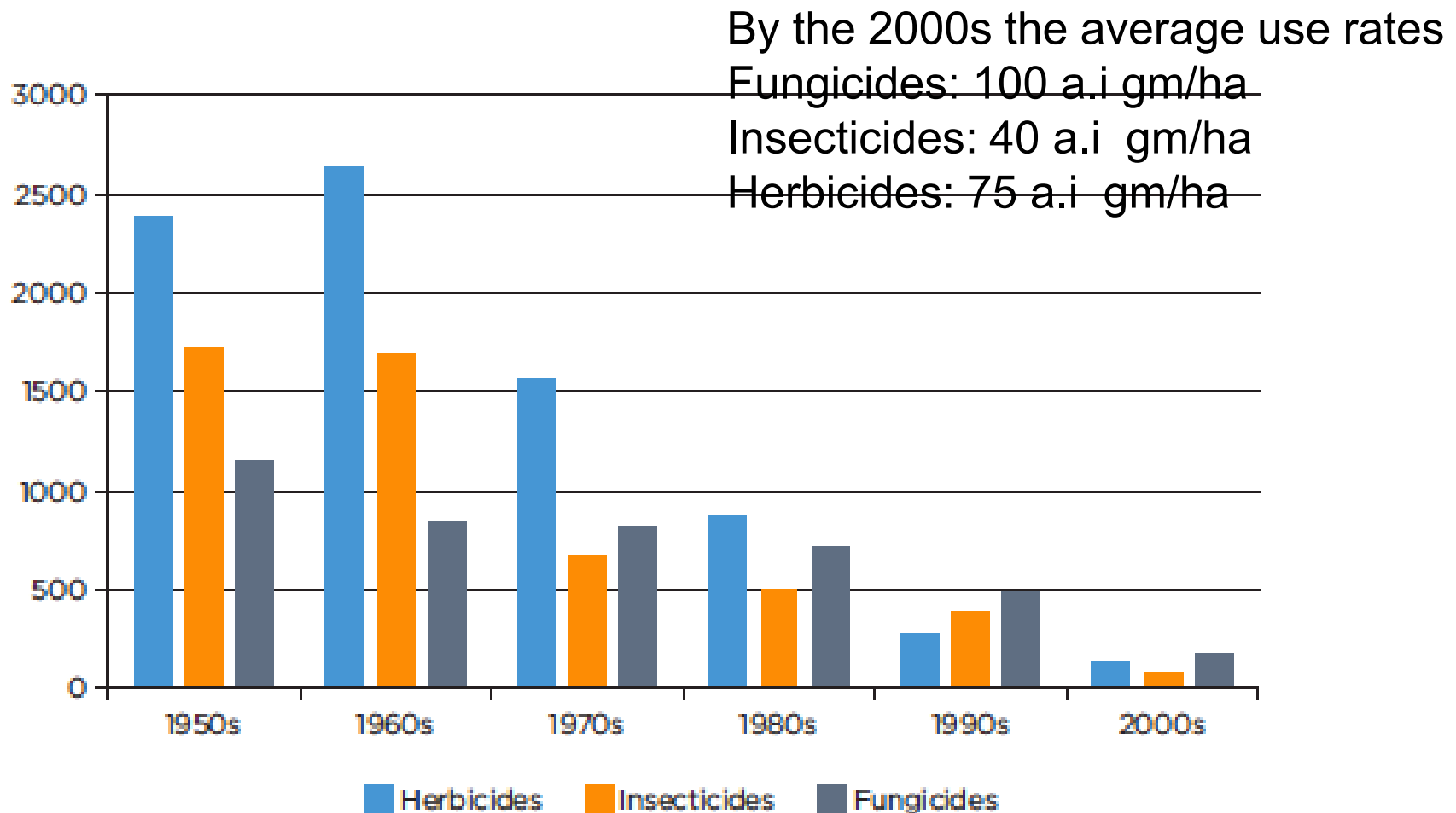
The **toxicity** index is the inverse of the water quality threshold (which measures concentration in parts per billion) and serves as the environmental risk indicator for humans from drinking water

The **persistence** indicator is defined by the share of pesticides with a half-life less than 60 days

Average Active Ingredient (A.I) Application Rates Over Time



Average Active Ingredient (A.I) Application Rates Over Time



Time to Market Product Comparison

3 Years



Tomato
Ketchup

8 Years



Boeing 787

11-13 Years



Crop protection &
GM Seeds

13 Years



Pharmaceuticals

Time to Market Product Comparison

3 Years



Tomato
Ketchup

8 Years



Boeing 787

11-13 Years



Crop protection &
GM Seeds

13 Years



Pharmaceuticals



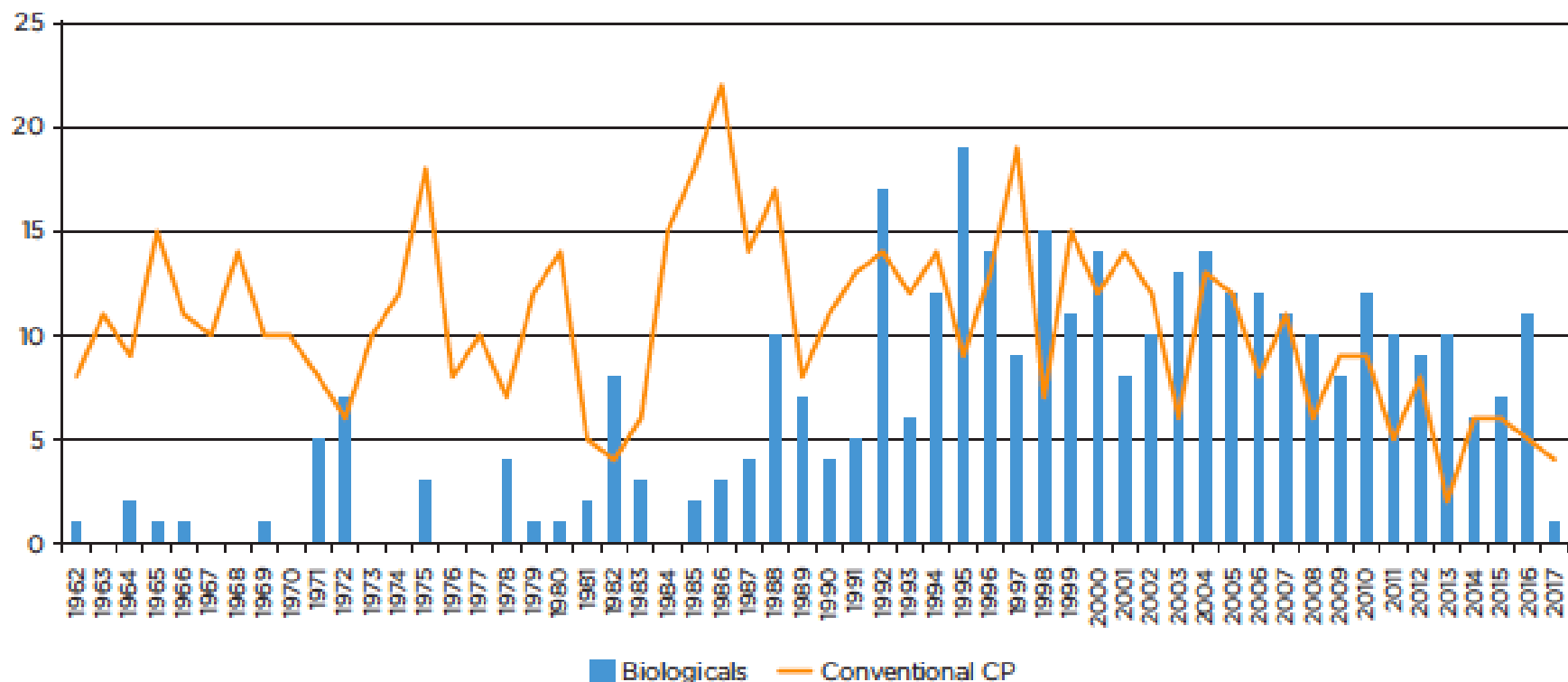
Australia 1.6 yrs

Asean 5.8 yrs

We need 16.8 years to deliver a new technology into the hands Asean Farmers

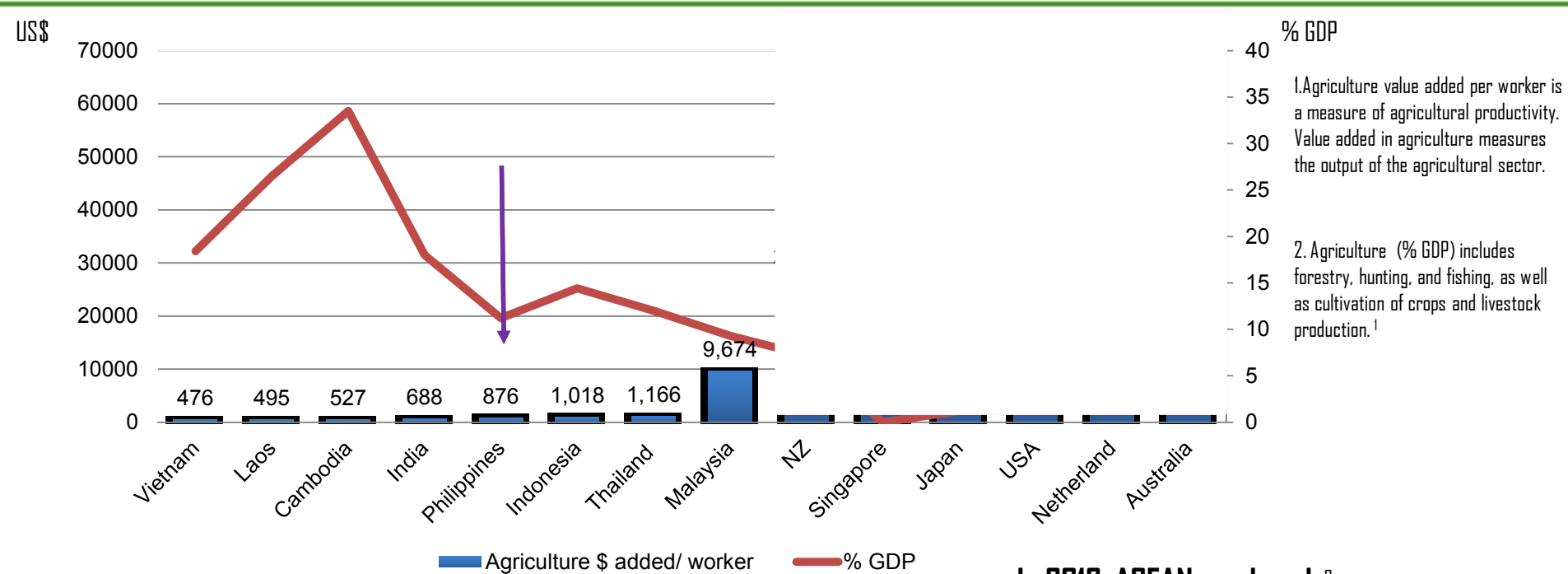
- Limited access to technology
- Obstacles in exports
- Proliferation of counterfeit crop protection products

Annual New Product Introductions for Biologicals and Conventional CP



Source: Phillips McDougall database and analysis

ASEAN's Economic Engine - Agriculture



The Top 8 ASEAN agro-producing countries account for around a *20%* median average of national GDP, but the agricultural labor force stands at a staggering average of *46%*⁴

In 2012, ASEAN produced:³

- 129 million tons of rice
- 40 million tons of corn
- 171 million tons of sugarcane
- 1.44 million tons of soybean
- 70.34 million tons of cassava

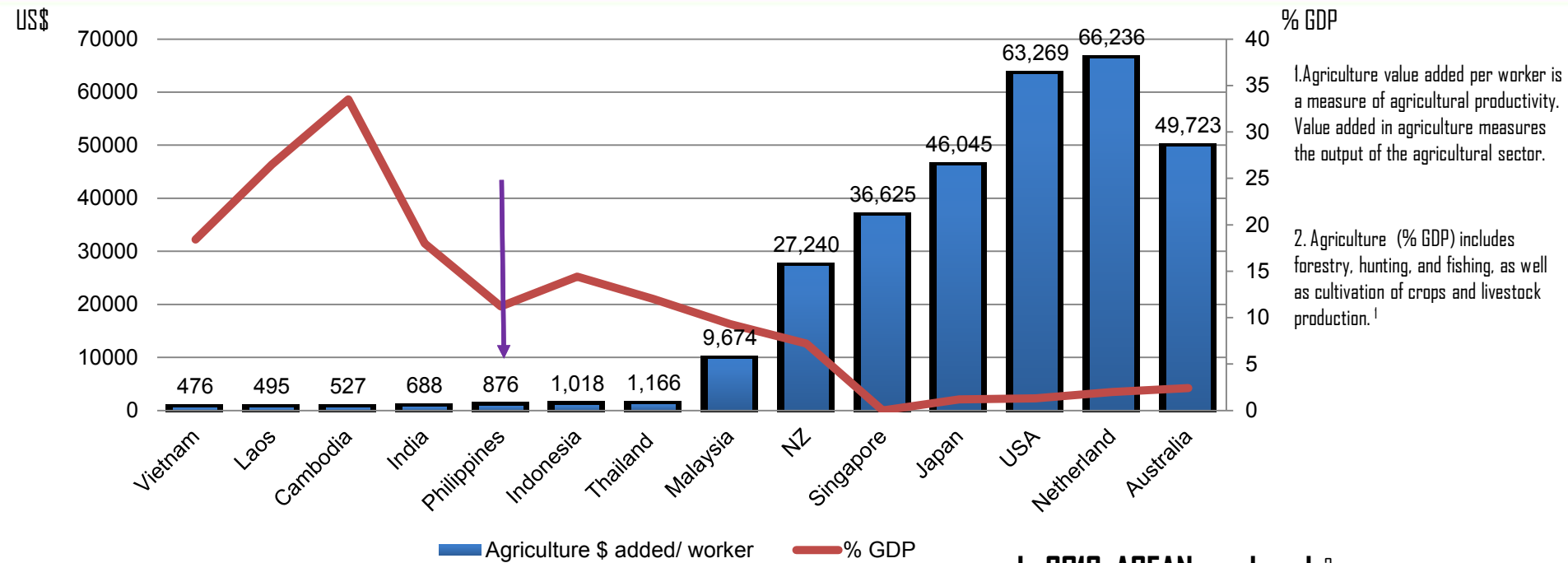
¹ The World Bank. Data. <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>. Accessed on 3 June, 2015.

² Invest in ASEAN. Accessed on 26 May, 2015.

³ Invest in ASEAN. Accessed on 26 May, 2015.

⁴ Central Intelligence Agency. The World Factbook. Accessed on 26 May, 2015.

ASEAN's Economic Engine - Agriculture



The Top 8 ASEAN agro-producing countries account for around a *20%* median average of national GDP, but the agricultural labor force stands at a staggering average of *46%*⁴

In 2012, ASEAN produced:³

- 129 million tons of rice
- 40 million tons of corn
- 171 million tons of sugarcane
- 1.44 million tons of soybean
- 70.34 million tons of cassava

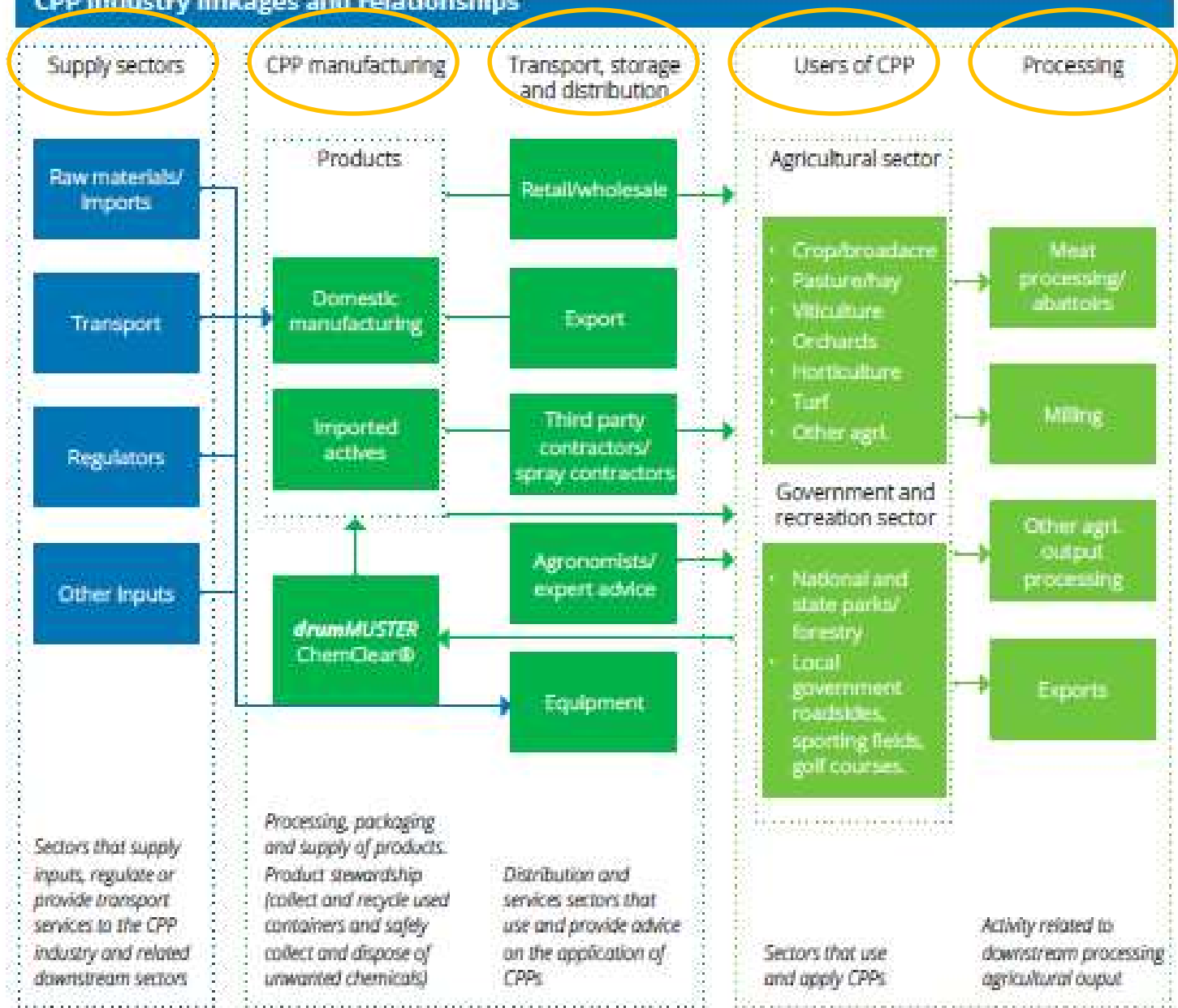
¹ The World Bank. Data. <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>. Accessed on 3 June, 2015.

² Invest in ASEAN. Accessed on 26 May, 2015.

³ Invest in ASEAN. Accessed on 26 May, 2015.

⁴ Central Intelligence Agency. The World Factbook. Accessed on 26 May, 2015.

CPP industry linkages and relationships



Agricultural production attributable to CPP

The Public Private Task Force on Sustainable Agricultural Growth in Vietnam was first formed in May 2010 before being re-named the Partnership for Sustainable Agriculture in Vietnam (PSAV) in 2015.

The partnership comprises of **over 60 partners** from global and local companies, provincial governments, the national research institute, international organizations and NGOs. The PSAV Task Forces (Working Groups) focus on six crops and the cross-cutting issue of agrochemicals.

PSAV - Program



55000



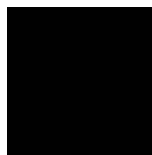
22817



15971



113%



68571



27428



14%





A Live IPM TV Program



<http://haugiangtivi.vn/clip/nhip-cau-khuyen-nong-18-6-2017/8271/>



Project Impacts – Gross margin (VND/ha)

Descriptions	Direct Farmers			Indirect Farmers		
	Before IPM	After IPM	Change	Before IPM	After IPM	Change
Yield (kg)	6.896	6.871	0%	6.919	6.874	-1%
Price	5.013	5.126	2%	5.031	5.141	2%
Revenue	34.569.428	35.225.708	2%	34.810.808	35.334.758	2%
Gross margin	18.001.500	21.089.160	17%	17.949.695	20.460.942	14%

Chilli IPM Project

- ▶ Guntur, Andhra Pradesh
- ▶ Training 1,400 farmers in 9 villages to grow export quality produce within MRL limits
- ▶ 1,137: chilli farmers now in program
- ▶ Key impact: reduced spray rounds from 30 to ... 17 per season
- ▶ Better selling price: 14% increase & increased profitability
- ▶ Chilies: passed export quality
- ▶ Debt-free
- ▶ Better: household income & improved lifestyle



Community Involvement



In Summary: Vietnam Agriculture Powered by Plant Science has Prospered – but what's next?..

- As demands on Vietnam's 25 million farmers have increased, plant science technology has helped them grow more safe and nutritious food than ever before
- This is helping feed a growing nation and drive exports
- With an increased role comes increased responsibility – more capacity-building responsible use trainings and partnerships with more food stakeholders, including the Vietnam Government, have been implemented and continue
- **Vietnam agriculture is at a crossroads..** One direction is the path forward of enabling and empowering farmers through technology to safely produce even more food, realize better lives, and help propel the national economy – could the other direction prove a dangerous detour that puts the nation's agricultural productivity in peril?

#HelpingFarmersGrow

Plant science provides modern
agricultural tools and technologies
which help farmers:



— Look After —

OUR PLANET



— Feed a Growing —

POPULATION



— Progress Rural —

COMMUNITIES



CropLife
INTERNATIONAL

