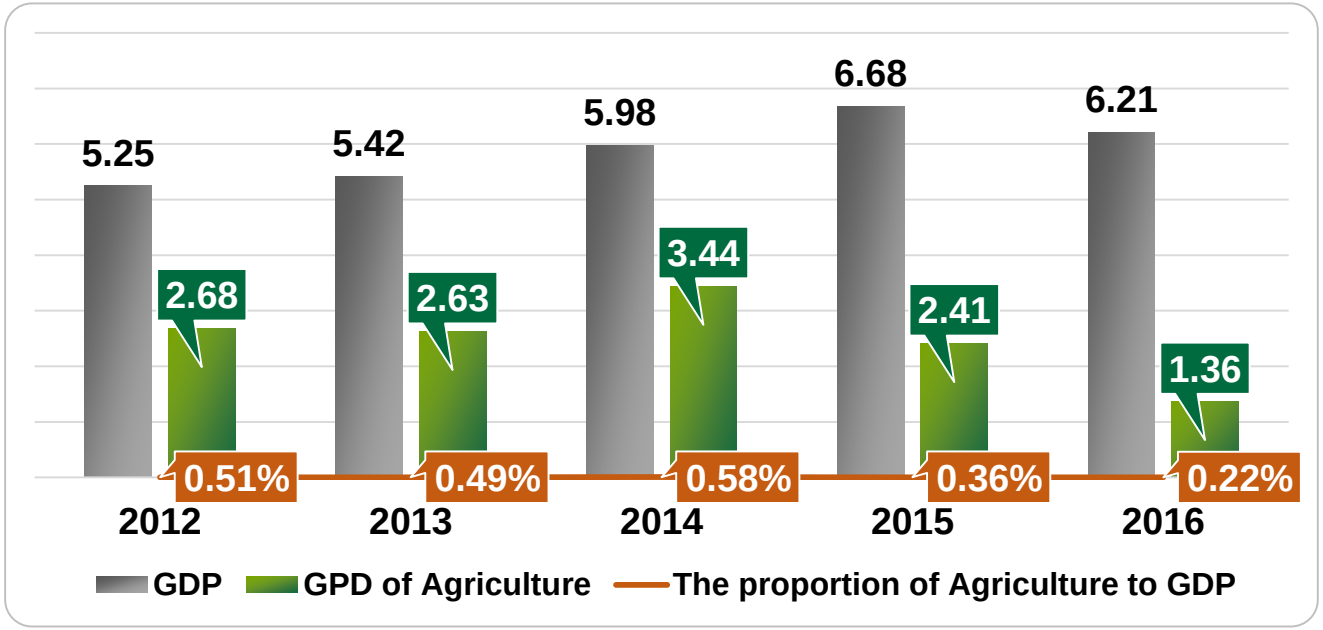
UPOV IN VIETNAM

A case study of Vinaseed group

CONTENT

I. AGRICULTURAL INDUSTRY IN VIETNAM

AGRICULTURAL INDUSTRY IN VIETNAM



Source: General Statistics Office of Vietnam (GSO)

The export value of agricultural products (2016)

Vegetable: 2.5 billion USD — ↑ 34 %

Cashew: 2.8 billion USD — ↑ 19 %

347,000 tons

Coffee: 3.3 billion USD — ↑ 25 %

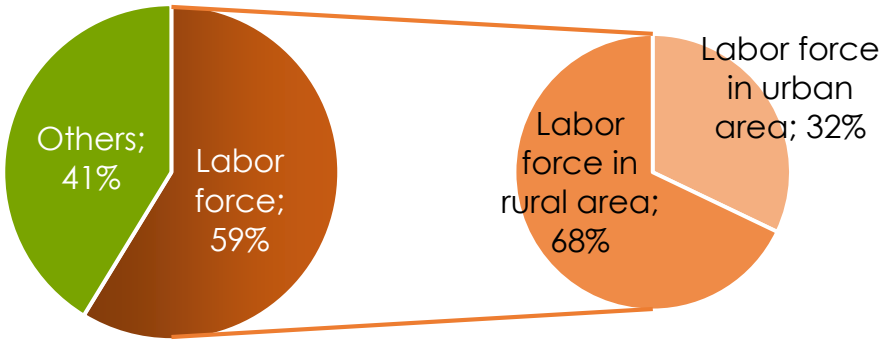
1.78 million tons

Rice: 2.2 billion USD — ↓ 22 %

4.8 million tons

Source: General Department of Vietnam Customs
Note: The value were compared to the previous period's value

92.7 million persons (2016)



42% labor force working in agricultural sector

- The growth of agriculture has decreased in recent years from **2.68%** in 2012 to **1.36%** in 2016.
- The proportion of value-added product is low
- Low quality products
- Weak competitiveness

MARKET SIZE OF AGRICULTURAL PRODUCTS

Year 2016 : 59.8 billion USD
(estimated)

Growth rate:
12.9%/year

Year 2020: 97.2 billion USD

Seeds **671 mil USD**	▪ Rice: 504 mil USD ▪ Maize: 86 mil USD ▪ Vegetable: 81 mil USD	**1.7 billion USD** CAGR: 20%	▪ Rice: 1.35 billion USD ▪ Maize: 131 mil USD ▪ Vegetable: 215 mil USD
Fertilizers **6.6 billion USD**	▪ Fertilizers : 6.6 billion USD	**5.5 billion USD** CAGR: 3.8%	▪ Fertilizers: 5.5 billion USD
Crop protection chemicals **1.6 billion USD**	▪ Crop protection chemicals: 1.6 billion USD	**1.5 billion USD** CAGR: 5.2%	▪ Crop protection chemicals: 1.5 billion USD
Food, animal feed **34.1 billion USD**	▪ Rice: 25.5 billion USD ▪ Maize: 3.2 billion USD ▪ Vegetable: 5.4 billion USD	**50.2 billion USD** CAGR: 11.5%	▪ Rice: 35.6 billion USD ▪ Maize: 4.9 billion USD ▪ Vegetable: 9.7 billion USD
Another agricultural product **16.7 billion USD**	▪ Coffee, cashew nuts, pepper, tea, cassava, rubber: 12.5 billion USD ▪ Domestic consumption: 4.2 billion USD	**38.3 billion USD** CAGR: 17.7%	▪ Coffee, cashew nuts, pepper, tea, cassava, rubber: 26 billion USD ▪ Domestic consumption: 12.3 billion USD (CAGR: 21.4%)

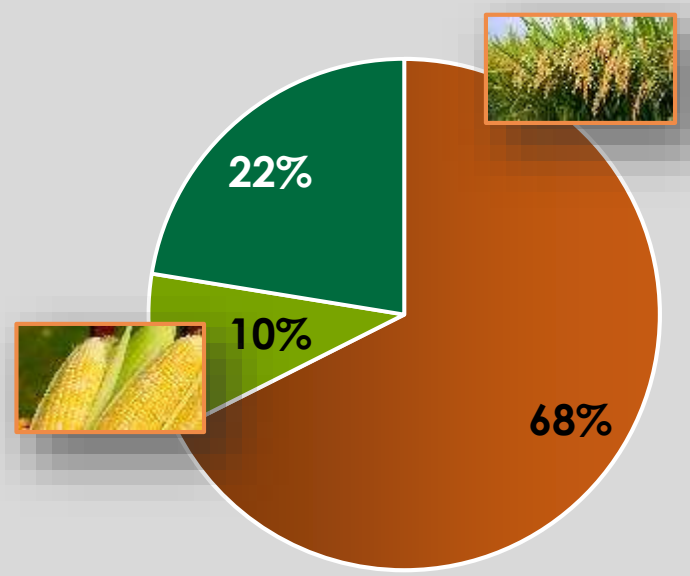
Sources: MARD, SSIAM

CONTENT

II. SEED INDUSTRY IN VIETNAM

SEED INDUSTRY IN VIETNAM

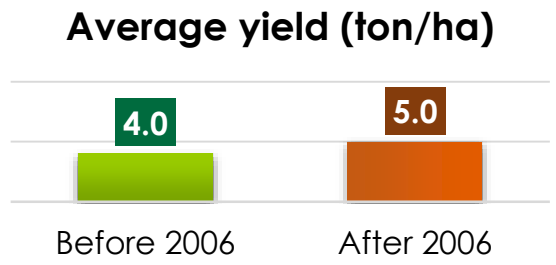
AGRICULTURAL PRODUCTION LAND

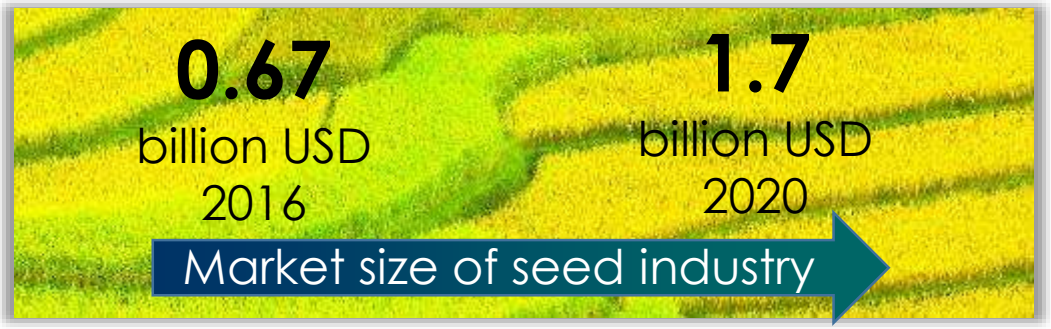


Source: General Statistics Office of Vietnam (GSO)

11.5 million ha agricultural production land

Average yield per hectare **5.0** ton/ha ↑ 25%

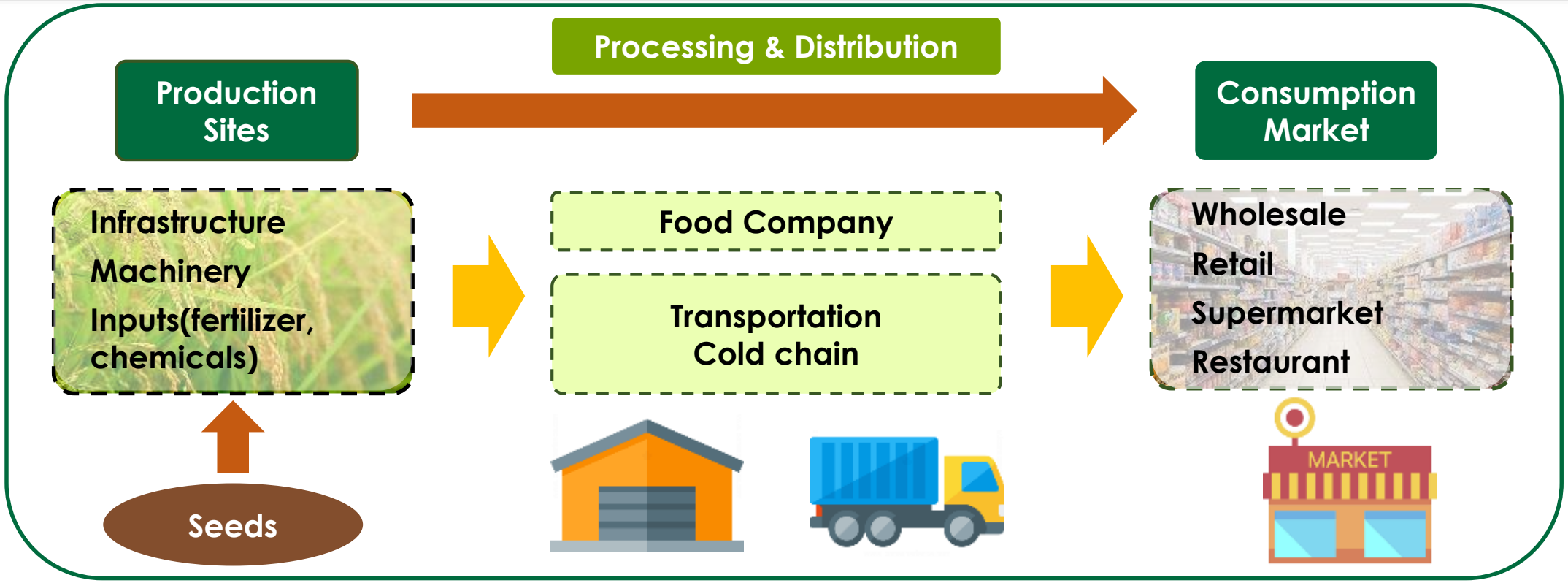




- Recently, agriculture production has faced several challenges caused by adverse weather such as: extremely cold weather in the Northern provinces; drought, heavy rain and flood in the central provinces; especially drought-parched in the Central Highlands, and severe saline intrusion in Mekong River Delta. Those problems force Vietnam to find solutions to improve seeds adapting with climate change.
- In fact, the area for agricultural production decreases faster and faster than the previous period.
  => The requirement of increasing of yield to meet food safety.

SEED IN THE FOOD VALUE CHAIN

- To solve problems in terms of low value of agricultural production and improving quality of seeds, putting seed production in a food value chain become a strategic and necessary solution in Vietnam.
- Seeds are at the upstream of the Food Value Chain.
- High quality seeds are essential to start expected production.
- Without qualified seeds, effective and efficient food value chain cannot be implemented



CONTENT

III. INTRODUCTION OF VINASEED GROUP

1 INTRODUCTION OF VINASEED GROUP

1. Name of company

VIETNAM NATIONAL SEED JOINT STOCK COMPANY

2. Head office

No. 1 Luong Dinh Cua Str., Phuong Mai Ward, Dong Da Dist., Hanoi, Vietnam

3. Business areas

- **Produce, trade, export, and import agricultural products and materials**
- **Research, select, produce and trade seed**
- **Transfer high-tech agricultural technical services**

4. History

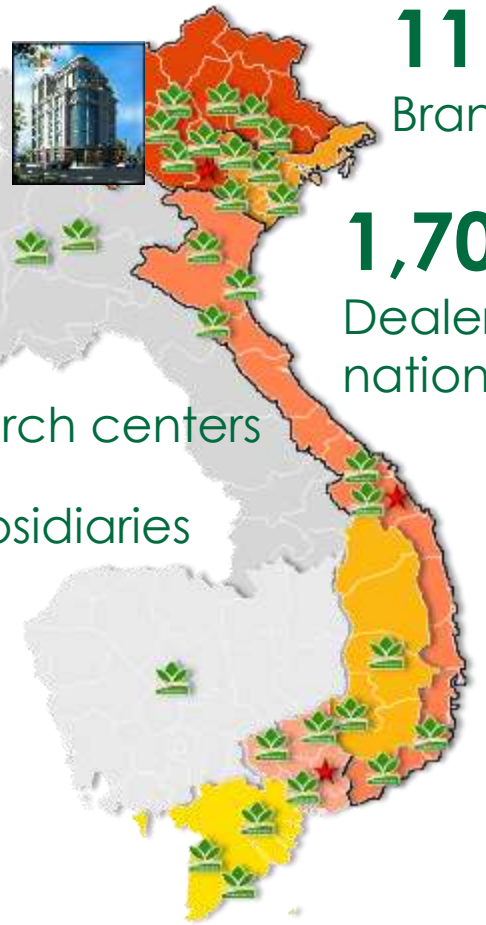
1968
Established
Under MARD

2004
Privatizied
The enterprise was changed into Vietnam National Seed Corporation

2006
Became a public company
Listed on HOSE with trading code NSC

2011- Now
Recognized as a Science and Technology Enterprise
(From 2011)

5. Branches and Subsidiaries



11 Branches

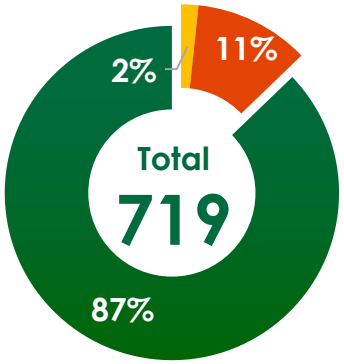
1,700 Dealers nationwide

2 Research centers

4 Subsidiaries

1 INTRODUCTION OF VINASEED

6. Human resources



- Professor, Doctor of Science **12**
- Master **80**
- Bachelor, Agricultural engineer **627**

7. Business status

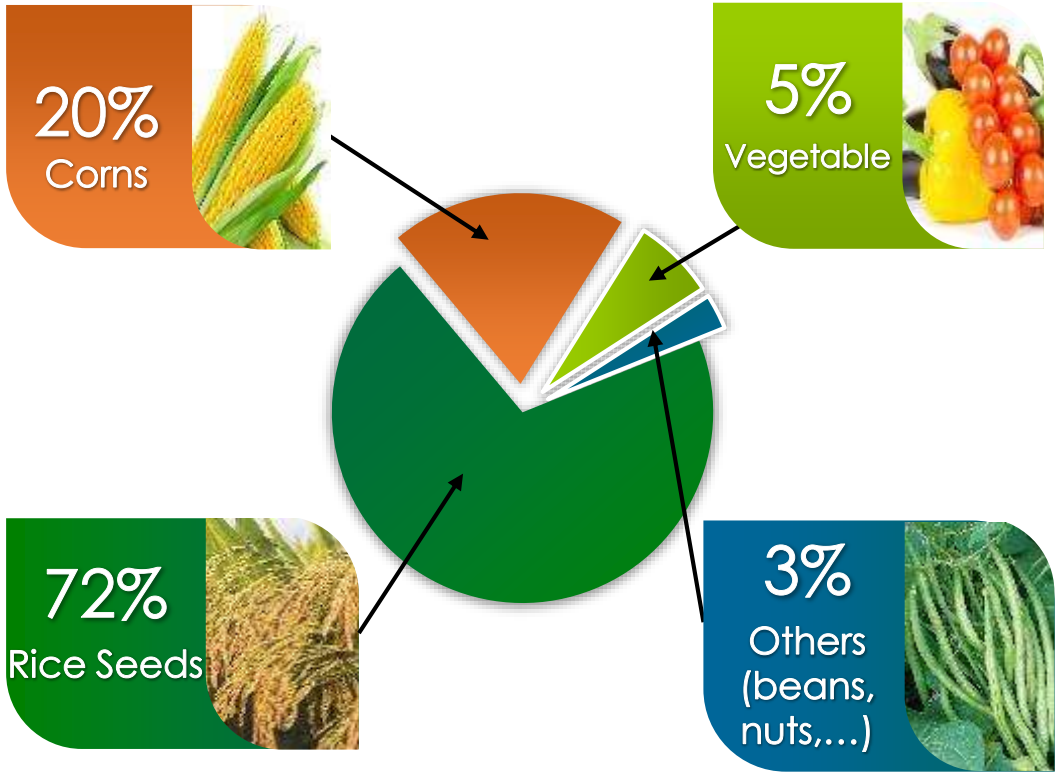
Revenue

58.8 million USD

Total asset

65.8 million USD

8. Product structure by revenue



9. PVP activities

55 Applications

35 PVP Certificates

PRODUCTS OF VINASEED

HIGH QUALITY RICE
STRAINS THIEN UU 8

HIGH QUALITY
AROMATIC RICE RVT

CONVENTIONAL RICE SEED

HYBRID RICE SEED XUYEN
HUONG 506

HYBRID RICE SEED TH3-4

HYBRID RICE SEED

HYBRID GLUTINOUS CORN HN88

HYBRID GLUTINOUS CORN HN66

GLUTINOUS CORN SEED

LVN10

HN45

SINGLE CROSS-BREEDING SEED

TRAN CHAU HUONG RICE

HOA VANG DB GLUTINOUS RICE

RVT RICE

JAPONICA RICE

AGRICULTURAL PRODUCTS

TAKI MELON

TAKA MELON

ICHIBA MELON

MELON

CONTENT

IV. PLANT VARIETY PROTECTION

1 HISTORY OF PVP SYSTEM IN VIETNAM

1995

- Dispatching staffs to Overseas
- Invite Experts from experienced countries and UPOV
- Seminars/Workshops on PVP for relevant persons

2004

- Establish: PVPO/DUS Test Office (April 1st,2004)
- Drafting Legislation Document

2006

- Vietnam became the 63rd member of UPOV (2006)
- Exploit the benefits from PVP system

2016

- Operating the system under UPOV Convention
- Fully member of UPOV on December 24th, 2016

NOW

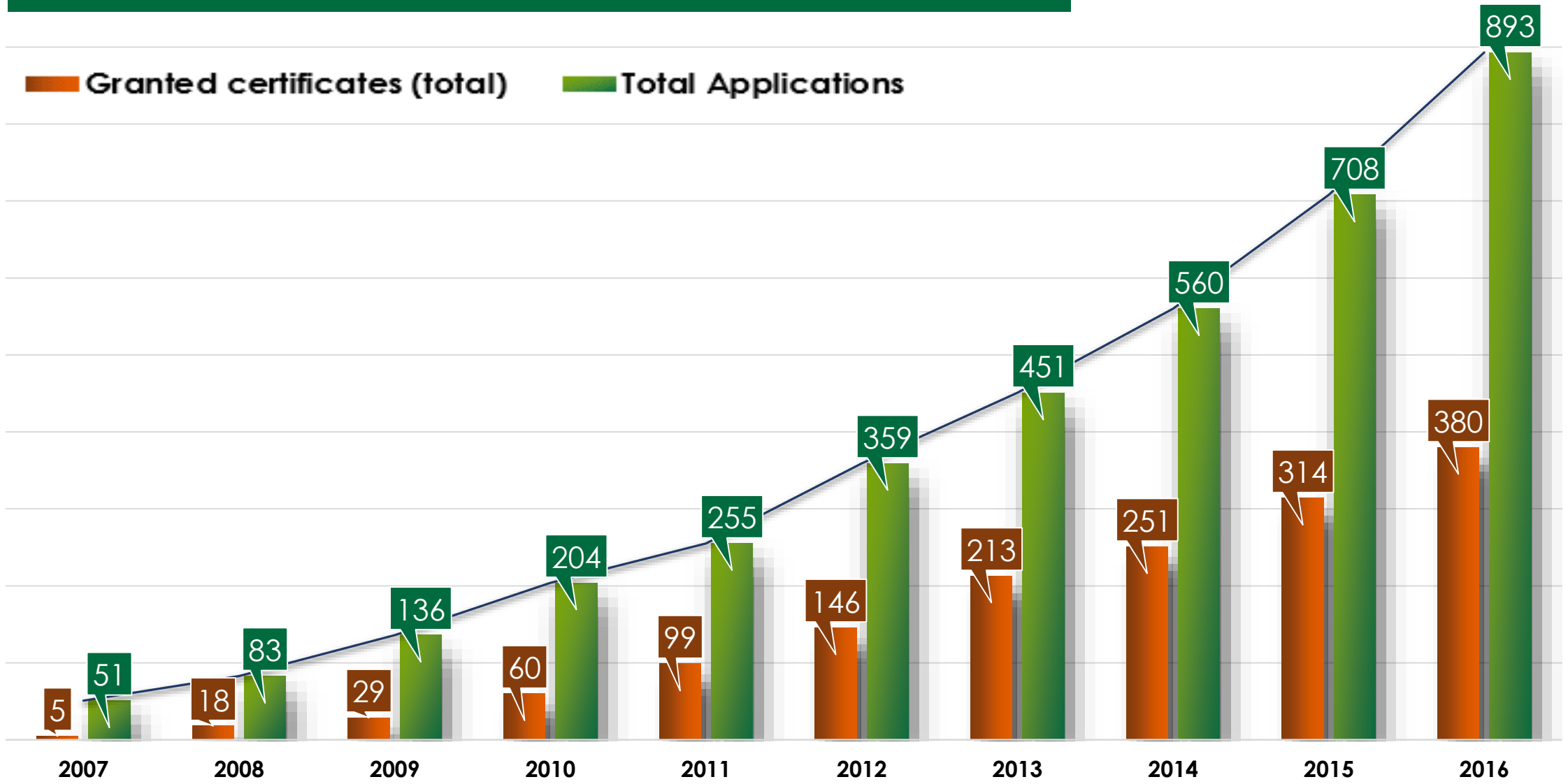
Study the real conception of PVP

Establishing National PVP system and Preparations to join UPOV

Implementing PVP System under UPOV Convention

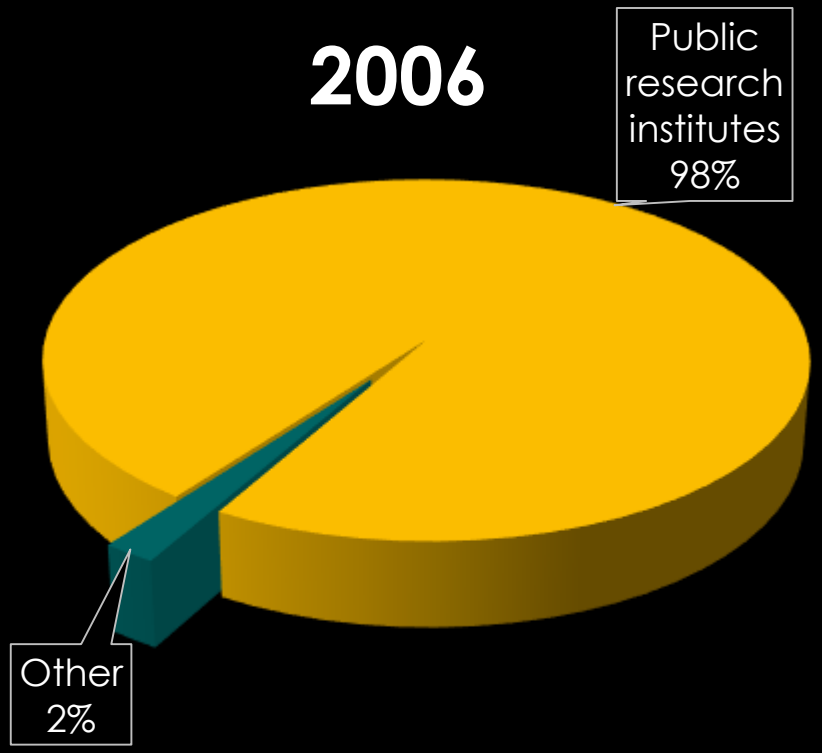
UPOV IN SEED INDUSTRY

No of PVP Certificates per total applications

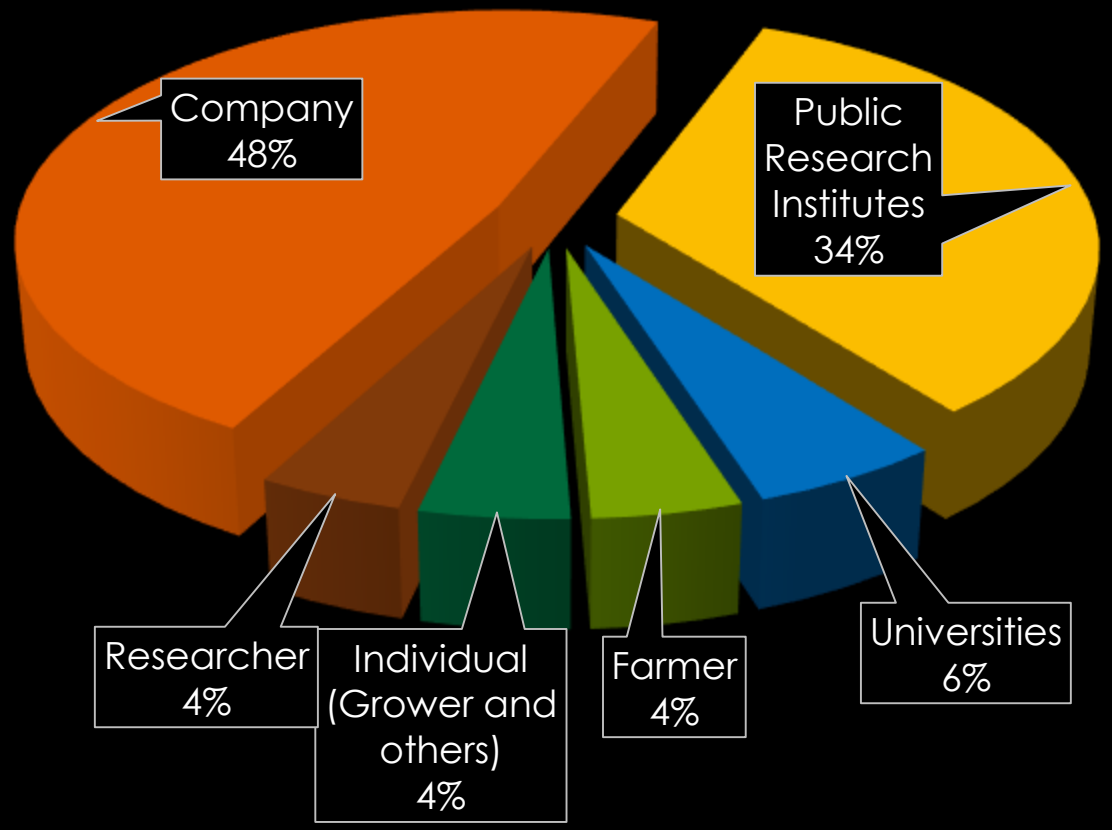


UPOV IN SEED INDUSTRY

2006



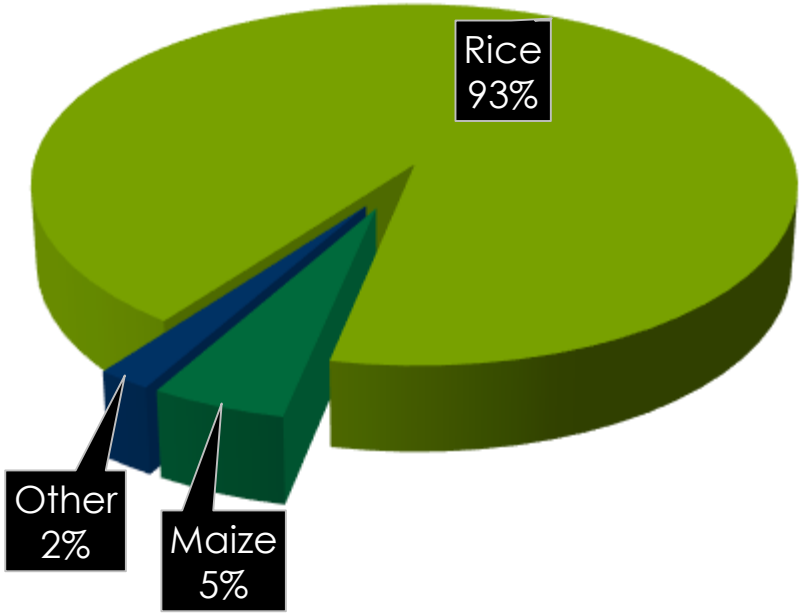
2016



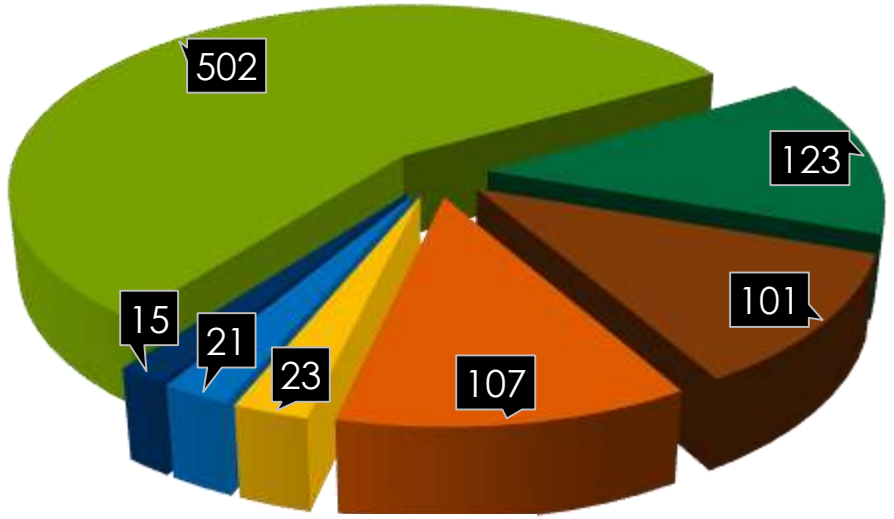
SUBJECTS APPLYING FOR PVP CERTIFICATES IN VIETNAM

UPOV IN SEED INDUSTRY

2006



2016



- Rice – 56.2%
- Maize – 13.9%
- Vegetable – 11.3%
- Flower – 12.0%
- Short Industrial Crop – 2.6%
- Fruit tree – 2.4%
- Other – 1.7%

Distribute of application by species/group

2 PVP IN VINASEED GROUP

Investment

Reinvestment

Farmers and Consumers enjoy new varieties

Facilities

Import genes

Breeders

R&D center

Promoting new varieties

PVP system

Breeding of New Variety

Registration

Receiving certificate

Distribution channel

Processing Packaging

Transfer

Commercialize

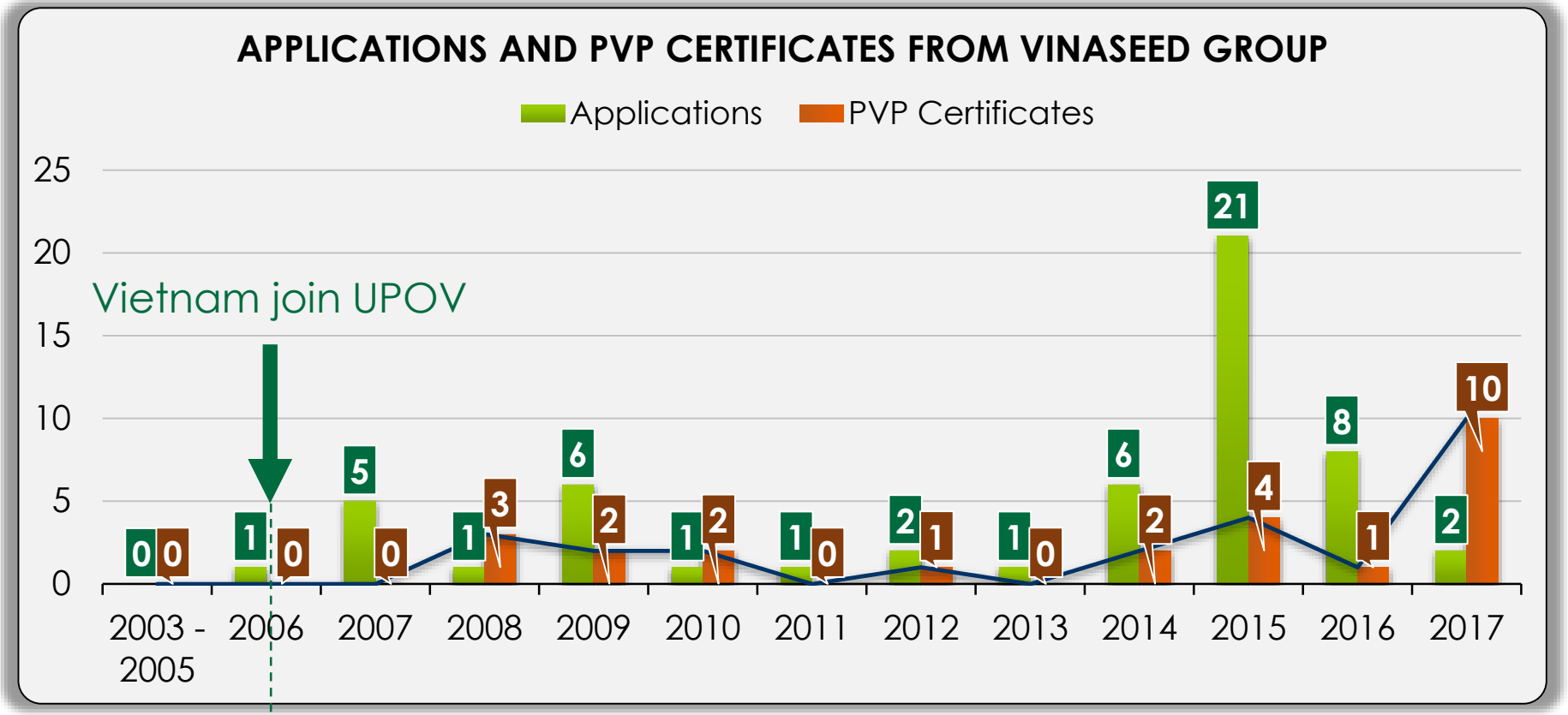
Vinaseed Group

Mass production

Vinaseed's factory

3 THE IMPACT OF UPOV

a. Increase number of PVP certificates and R&D investment



55 Applications in total

35 Certificates in total

10 self-developed seeds

25 transferred seeds

Between 2006 and 2017, no. of PVP certificates of Vinaseed have increased dramatically from 0 to **35**

13,500 USD

BEFORE 2006

1.5 million USD for transferring

9.0 million USD for self-development and R&D facilities

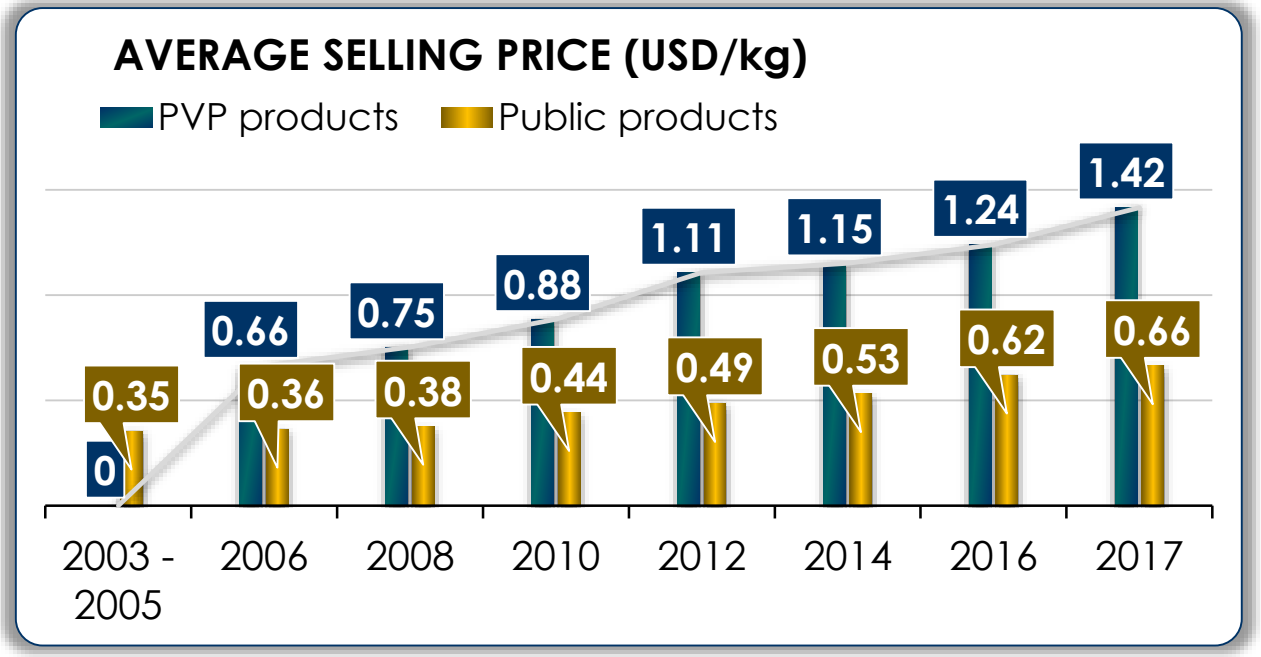
INVESTMENT FOR R&D ACTIVITIES FROM 2006 TO NOW

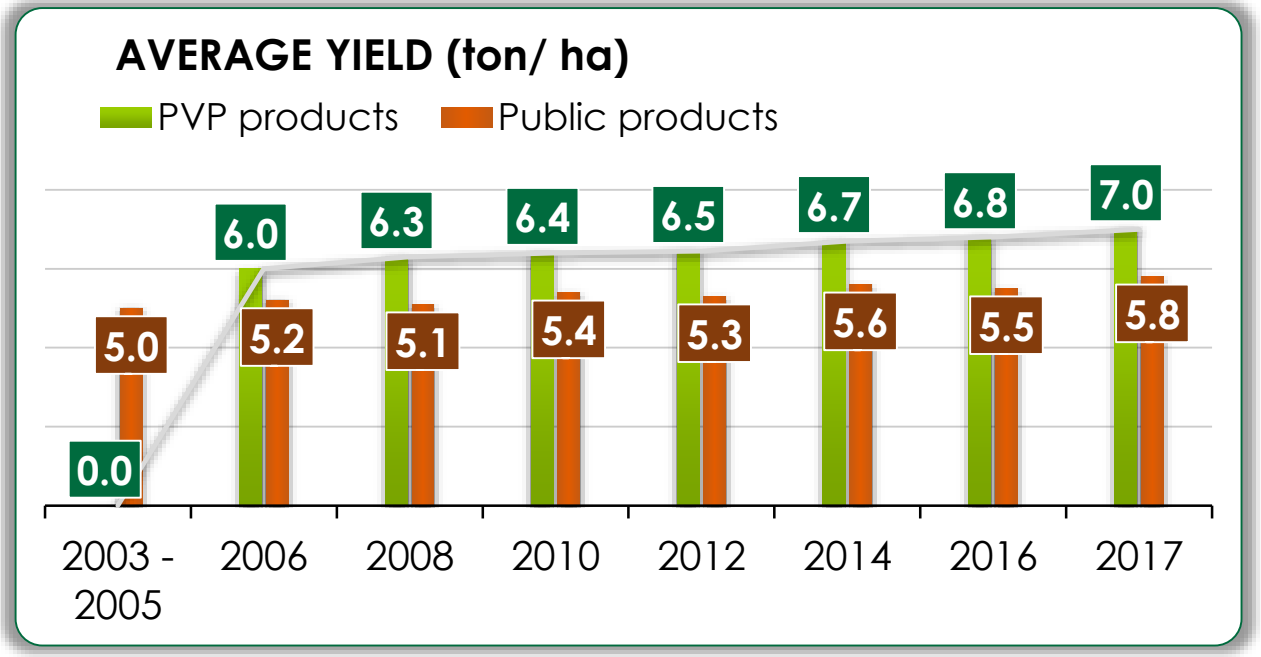
10.5 million USD In total

↑ **778** times

3 THE IMPACT OF UPOV

b. Increase yield and value

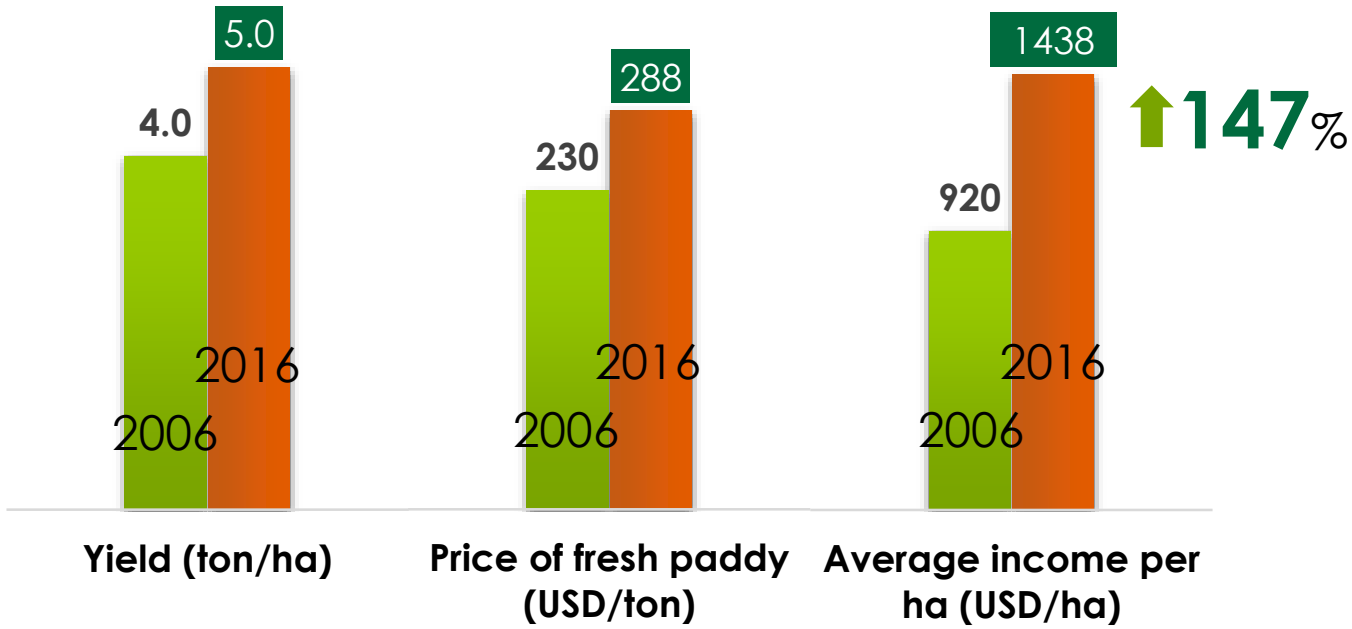




- Enhancing investment on R&D has brought Vinaseed group economic and productive effects.
- From 2006 to 2016, the revenue of PVP products increased significantly from **26,500** USD to **38.2** million USD which was accounted for **65%** of total revenue in 2016.
- The average selling price of PVP products have gone up by **115%** compared to the public one. In addition, the PVP products have an increase in average yield by **21%**. These are strong evidences to prove positive impacts of UPOV in Vietnam seed industry.

3 THE IMPACT OF UPOV

c. Increase income of farmers



- Farmers are able to increase their income by using PVP products whose productivity, quality and value are higher than non-PVP product's.
- Reducing the cost of pesticides and chemicals is also one of benefits that farmers get from PVP program.

d. Protect the environment

- Developing "Green" products and kinds of products resisting pests and disease and adapting to climate change => Decrease the rate of using pesticides and chemicals by applying new preeminent genes in breeding seeds and new technology in production.
- Saving electric and water power by using clean energies and environmentally-friendly materials

CONTENT

V. THE VALUE CHAIN OF VINASEED GROUP

HIGH QUALITY AROMATIC RICE RVT

ABILITY TO RESIST PESTS

Good

GROWTH PERIOD

Winter – Spring season

120 – 130 days

Summer – Autumn season

95– 105 days

ADAPTABILITY

High adaptability

Can be grown on many types of land.

OTHER TRAITS

High halophilic resistance

High resist drought

Delicious and aromatic

PVP PERIOD

From May, 2012 to May, 2032

PRODUCTIVITY

7.0 – 7.5 tons/ha

ABILITY TO RESIST LODGING

Very good

Focus on high quality rice to develop a national brand of rice for domestic and exporting market

THE VALUE CHAIN MODEL OF RICE RVT

- Buy seeds
- Support input materials (seeds, fertilizers,…) partly

FARMERS

VINASEED GROUP

- Technology transfer
- Training course

Increase income by **51%** compared to farmers not joining the value chain

	Joining the model	NOT joining the model
Yield (tons/ha)	7.0	5.8
Purchase price of fresh paddy (USD/ton)	288	230
Total income per ha (USD/ha)	2,016	1,334

Create jobs for local workers especially for female

Processing, packaging

Profit

Increase by **68%** per unit compared to not using the model

DISTRIBUTION CHANNEL

VinMart

Sell output products

CUSTOMERS

The purchase of customers for products:

- Using the model: **1.1** USD/kg
- **NOT** using the model: **0,6** USD/kg

HYBRID GLUTINOUS CORN HN88

ABILITY TO RESIST DROUGHT

Very good

QUALITY

Delicious

Glutinous

Soft

GROWTH PERIOD

From planting to harvesting

62 – 67 days

OTHER TRAITS

Uniformly

PVP PERIOD

From August, 2011 to August, 2031

PRODUCTIVITY

Fresh ear yield

18 – 20 tons/ha

ABILITY TO RESIST PESTS

Good

Vinaseed group has emerged a niche market – glutinous corn market in Vietnam instead of single cross-breeding corn and set the target to dominate this market

THE VALUE CHAIN MODEL OF CORN HN88

- Buy seeds
- Support input materials (seeds, fertilizers,…) partly

FARMERS

VINASEED GROUP

- Technology transfer
- Training course

Create jobs for local workers especially for female

Processing, packaging

Vinaseed's factory

DISTRIBUTION CHANNEL

CUSTOMERS

Sell output products

Profit

Increase by **140%** per unit compared to not using the model

Increase income by **100%** compared to farmers not joining the value chain

	Joining the model	NOT joining the model
Yield (ears/ha)	40,000	28,000
Purchase price per fresh ear (USD/ear)	0.13	0.09
Total income per ha (USD/ha)	5,310	2,478

The purchase of customers for corn seed:

- Using the model: **12.6** USD/kg
- **NOT** using the model: **5.3** USD/kg


THANK YOU!