

THAI NGUYEN UNIVERSITY OF AGRICULTURE AND FORESTRY IN PLANT VARIETIES PROTECTION



Thai Nguyen, November 2017

CONTENT

- General Overview: New point in Plant Varieties Protection in Vietnam to commercialize plant varieties in Vietnam
- Plant Varieties Protection for commercialization of plant varieties of TUAFF
- TUAFF's Strategies in commercialization of plants varieties protection in the next stage.

PART I: INTRODUCTION



- Agricultural country.
- High density of population
- Almost slopping land (75%)
- Improve living standard of the lowland and upland people – The current main objective of VN's Government
- Seed Sector plays an important role to meet the objective – material contribution of new plant varieties.

Plant variety management system in Vietnam

PV National registration system (MARD)*

BEFORE 2006

- National seed registration system
- Management system (couple of aspects) not fully accordance with the WTO agreement

PV Protection department

2006-NOW

- Joining UPOV
- Two parallel systems
- Benefits to plant breeder, Local Seed Companies and farmers/growers

The Seed distribution system of new Var.

BEFORE PVP

Breeders



No Professional distribution system

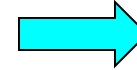
Farmer

Is not professional,
Difficult on Seed Quality control

AFTER PVP

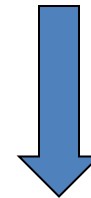
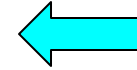
Breeders

License

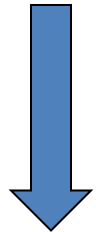


Company

Royalty



Good professional distribution system



Farmer, growers

Good service for the farmer;
Better seed quality due to professionalism

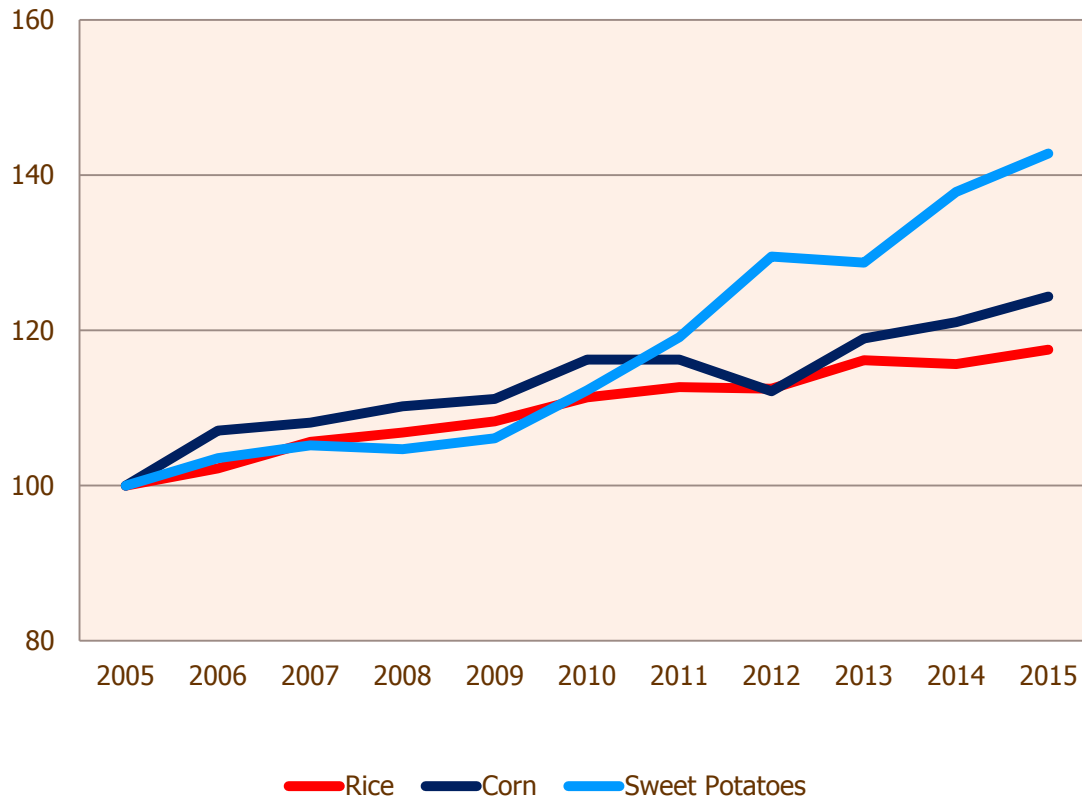
Opportunities from plant breeding: Higher value for exporting Agricultural products

- Exporter on agriculture products.
- For rice: 5/10 protected varieties are cultivated in biggest area for exporting.
- New varieties of flowers (rose, cymbidium, anthurium...) are being introduced to VN by foreign countries.



Plant breeding in Viet Nam: Yield vs. overall productivity developments

Vietnamese yield developments over time: major arable crops (index, 2005=100%)



→ Per annum since 2005:

- rice: + 1.6 %,
- corn: + 1.8 %,
- sw. potatoes: + 3.6 %.

→ To compare, global yield increases are in the range of:

- rice: + 1.3 %,
- corn: + 1.1 %,
- sw. potatoes: - 0.3 %.

→ Can Viet Nam already be considered an out-performer?

Plant breeding benefits: Supply changes also have financial implications

The income effects referring to major arable crops are just part of the overall impact.



- Whereas approximately USD 3.5 billion have been added to GDP when looking at rice, corn and sweet potatoes, ...
- ... an additional GDP of at least USD 0.2-0.3 billion has been added by having invested ten years into plant breeding for flowers.
- Indeed, Viet Nam has become one of the fastest growing flower markets.
- In 2016 for the first time in history the exportation value of fruit (banana, guava...) reached 1 billion USD and exceeded oil exportation in Vietnam

Opportunities for Local seed companies

- Before PVP: almost of them are trade company (not interest in research)
- When PVP system is established:
 - ✓ Beginning: they are licensed to exploit PBR from owner (transferred)
 - ✓ They develop breeding facility
- Now, many of them have own breeding facility
- Some become big with very good breeding facility.



Increasing farmer income



➤ A cuttings of new rose varieties may be sold 10 – 15 times more expensive than old Var.

➤ New variety is introduced in VN.

➤ Indigenous species are improved and transferring to growers.

➤ Farmers in both lowland and upland have chance to increase their income.





Farmers produce under license from Owners



Waiting to
the aircraft
for
exportation



Challenges

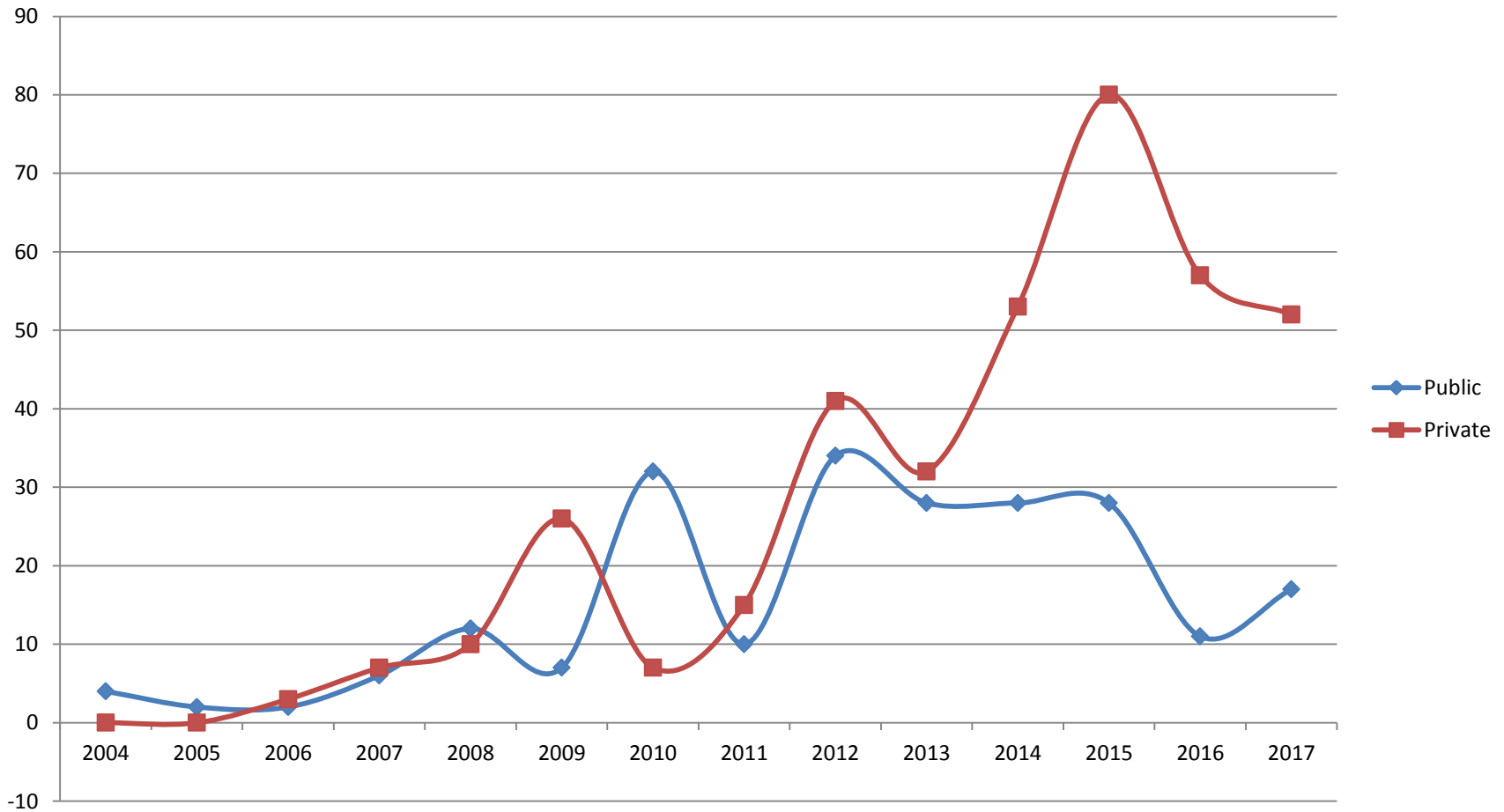
- More competition between domestic companies and international companies
- Administration system lagging behind and not upto international standards.
- Limited Awareness of PVP among communities, leading to difficulties in commercialization of PVP business.

STRATEGY FOR THE PROTECTION OF VARIETIES FOR COMMERCIALIZATION OF PLANT VARIETIES IN VIETNAM

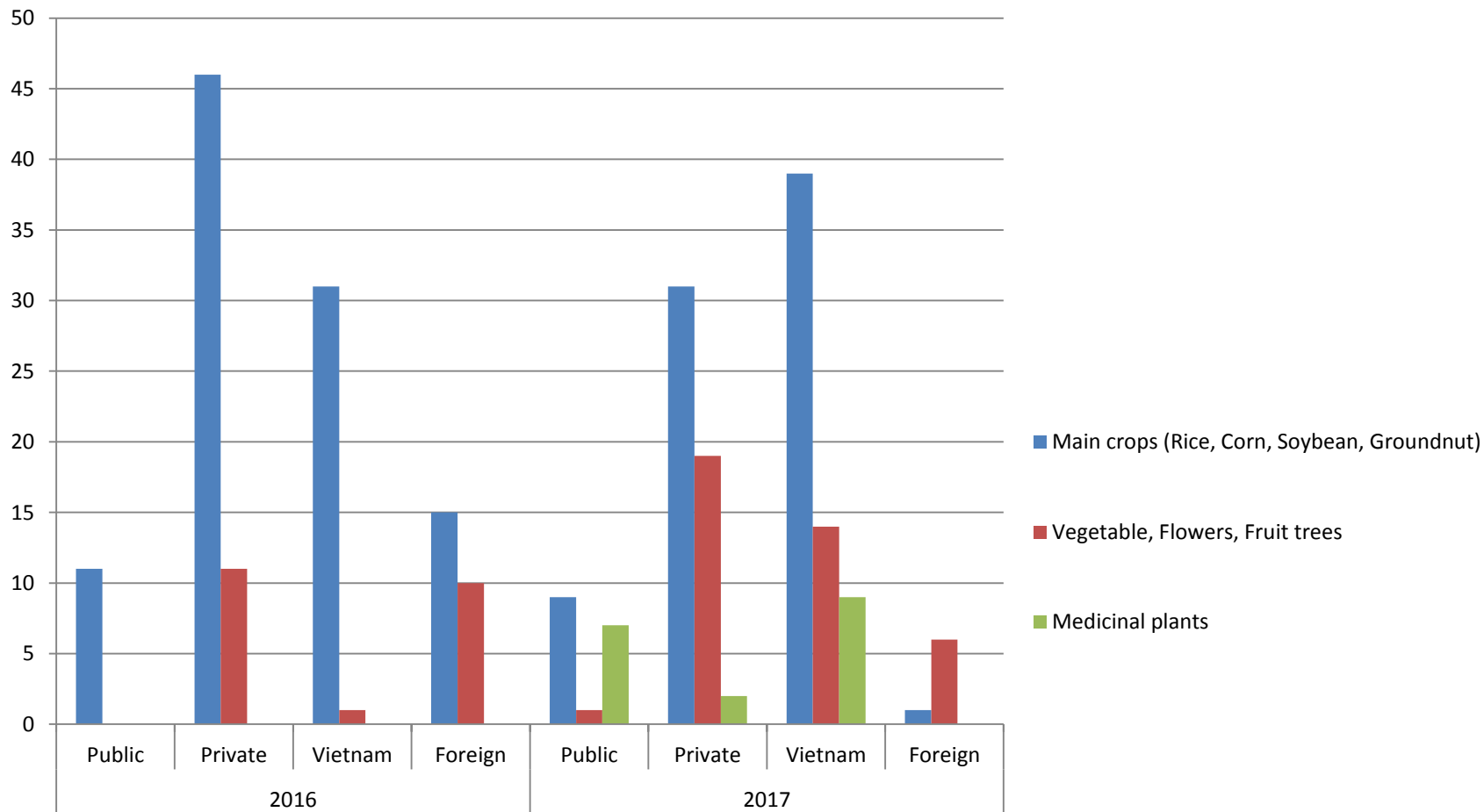
Increasing groups of plant varieties

- Main crops: for food products
- Horticulture plants: Horticulture products and food products
- Medicinal plants: for medicinal products
- Forest trees: for wood products.

Number of PVP in Vietnam (2004-2017)



Number of PVP in Vietnam (2016-2017) by groups



Application is increasing

- Number of applications increased very quickly
 - Many good new varieties and **native species** released for farmer and growers.
- Good new var. from oversea and new species
 - farmers/enterprises generate good income.



Value chain of production

Food crops



VSATTP

3-4 months

Trees



FSC

7-30 years

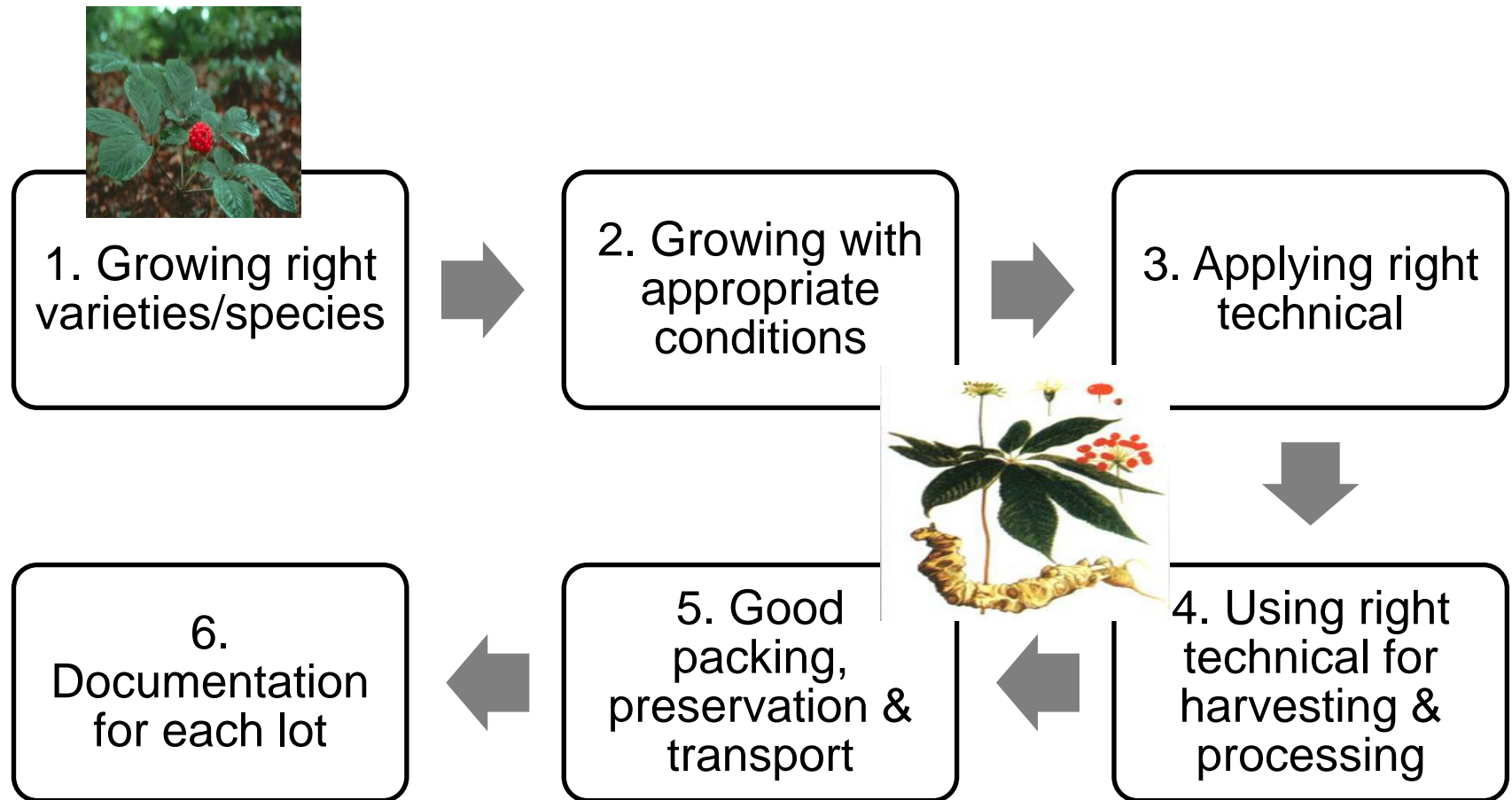
Medicinal plants



GAP/
GACP
(GMP)

1-10 years

CONTENTS OF GUIDELINE OF GOOD PRACTICING ON GROWING/COLLECTING MEDICINAL PLANTS (GAP/GACP)



Ngoc Linh Ginseng is becoming national product which was accepted application form for PVP in 2017.

**PART II. PLANT VARIETIES PROTECTION, PLANT
PRODUCTION AND COMMERCIALIZATION OF
Thai Nguyen University of Agriculture and
Forestry**



Introduction: Thai Nguyen University of Agriculture & Forestry TUAF (TUAF)

TUAF was founded in 1970

From 1994, TUAF became a member of Thai Nguyen University

TUAF has been recognized as one of the four Leading National Agriculture Universities in Vietnam



MISSION

- To offer a higher education on agriculture, forestry, environmental science and fields related to rural development in North Mountainous region of Vietnam;
- To conduct researches and transfer new technologies (agriculture, forestry and environmental science....)



- One of national key universities, largest Uni. In agriculture
- Multidisciplinary University: 8 faculties and 9 research institutes/centers
- Total staff: 652; 13,000 students (Vietnam, Philippine, Indonesia, Myanmar, Laos, Cambodia, Africa...)
- First university in VN having PV protected and commercialized on **medicinal plants**
- Contributing 40% inbred medicinal seeds for the country.



Patents granted in recent times

Year	Name of patents
2009	Pham Van Ngoc (2009). "Agroforestry rice varieties 7", Decision No. 458 / QĐ-TT-CLT, dated 25/11/2009, Ministry of Agriculture and Rural Development.
2016	Tran Ngoc Ngoan (2016). Certificate of cassava seed as a material for starch and biofuel production ". Decision No. 85 / QĐ-BNN-TT, dated 13/01/2016, Ministry of Agriculture and Rural Development.

Prize of forestry seeding production



Prize “ Golden rice”

On system of high quality seeds production by QD no. 4139/QĐ-BNN-TCCB

dated 20/10/2015

Number of PVP at the IFRAD in 2017



No.	Plant Variety	Species	Plant variety Owner	Plant breeder
1	ĐÌNH LĂNG HM-TN	Đình Lăng <i>Polycias fruticosa</i> (L.) Harms.)	IFRAD	Tran Thi Thu Ha and others
2	BA KÍCH TÍM HM- QN	Ba kích tím <i>Morinda officinalis</i> How	IFRAD	Tran Thi Thu Ha and others
3	SA NHÂN TÍM HM-ĐL	Sa nhân tím <i>Amomum Longiligulare</i> T.L.Wu	IFRAD	Tran Thi Thu Ha and others
4	GỪNG GIÓ HM- BS	Gừng gió <i>Zingber zerumbet</i> (L.) Sm.	IFRAD	Tran Thi Thu Ha and others
5	LAN KIM TUYẾN HM-LC	Lan kim tuyến <i>Anoectochilus</i> <i>setaceus</i> Blume	IFRAD	Tran Thi Thu Ha and others
6	LAN KIM TUYẾN HM-HG	Lan kim tuyến <i>Anoectochilus</i> <i>setaceus</i> Blume	IFRAD	Tran Thi Thu Ha, Pham Van Dien, Bui Van Dong and others
7	HOÀNG TINH ĐỎ - HM - HG	Hoàng tinh đỏ <i>Polygonatum</i> <i>kingianum</i> Coll. Et Hemsl	IFRAD and CAFED	Tran Thi Thu Ha, Pham Van Dien, Bui Van Dong and others

1. ĐÌNH LĂNG HM-TN (*Polycias fruticosa* (L.) Harms.)



Produce variety of HM-TN

Growing new plant variety

2. BA KÍCH TÍM HM-QN (Species: *Morinda officinalis* How)



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
ĐỘC LẬP - TỰ DO - HẠNH PHÚC

BẰNG BẢO HỘ GIỐNG CÂY TRỒNG

SỐ BẰNG: 58.VN.2017

TÊN GIỐNG CÂY TRỒNG: **BA KÍCH TÍM HM-QN**

THUỘC LOẠI: **Ba kích tím - *Morinda officinalis* How**

CHỦ SỐ HIỆU: **Viện NC & PT Lâm nghiệp**

TÁC GIẢ GIỐNG CÂY TRỒNG: **Trần Thị Thu Hà và đồng tác giả: Trần Văn Điền, Trần Ngọc Ngoan, Phạm Thị Thảo, Nguyễn Minh Đức, Lê Văn Phúc, Trần Thị Ty, Dương Thị Bích**

THỜI HẠN BẢO HỘ: **20 năm**

Hà Nội, ngày **30 tháng 06 năm 2017**
Cục Trồng cây
Nguyễn Hồng Sơn

Cấp mới QĐ số: 137/QĐ-TT-VPBH
Cấp lại QĐ số:



Morinda officinalis How HM-QN



Morinda officinalis How HM-QN Model

3. SA NHÂN TÍM HM- ĐL (Species: *Amomum Longiligulare* T.L.Wu)



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
ĐỘC LẬP - TỰ DO - HẠNH PHÚC

BẰNG BẢO HỘ GIỐNG CÂY TRỒNG

SỐ BẰNG: S/ VN 2017

TÊN GIỐNG CÂY TRỒNG: **SA NHÂN TÍM HM-ĐL**

THUỘC LOÀI: SA NHÂN TÍM - *Amomum longiligulare* T.L.Wu

CHỦ SỞ HỮU: VIỆN NGHIÊN CỨU VÀ PHÁT TRIỂN LÂM NGHIỆP

TÁC GIẢ GIỐNG CÂY TRỒNG: Trần Thị Thu Hà và đồng tác giả: Phạm Văn Điện,
Hoàng Thanh Phúc, Trần Văn Điện, Nguyễn Nghĩa Biên, Nguyễn Mỹ Hải

THỜI HẠN BẢO HỘ: 20 năm

Hà Nội, ngày 30 tháng 06 năm 2017

Cục trưởng Cục Trồng trọt
CỤC TRỒNG TRỌT
Nguyễn Hồng Sơn

Cấp mới QĐ số: 137/QĐ-TT-VPBH
Cấp lại QĐ số:



Amomum Longiligulare T.L.Wu HM – ĐL :-
planting at The Son Duong - TQ



Amomum Longiligulare T.L.Wu HM – ĐL flower



Amomum Longiligulare T.L.Wu HM – ĐL 28
fruit

4. GỪNG GIÓ HM-BS (Species: *Zingiber zerumbet* (L.) Sm.)



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
ĐỘC LẬP - TỰ DO - HẠNH PHÚC



BẰNG BẢO HỘ GIỐNG CÂY TRỒNG

SỐ BẰNG: 88.VN.2017

TÊN GIỐNG CÂY TRỒNG: **GỪNG GIÓ HM-BS**

THUỘC LOẠI: GỪNG GIÓ - *Zingiber zerumbet* (L.) Sm.

CHỦ SỞ HỮU: VIỆN NGHIÊN CỨU VÀ PHÁT TRIỂN LÂM NGHIỆP, CÔNG TY CỔ PHẦN NÔNG LÂM NGHIỆP VÀ MÔI TRƯỜNG VIỆT NAM.

TÁC GIẢ GIỐNG CÂY TRỒNG: Trần Thị Thu Hà và đồng tác giả: Đặng Kim Vui, Nguyễn Việt Hùng,
Nguyễn Nghĩa Biên, Đỗ Xuân Lân, Vũ Thị Kỳ Liên, Hoàng Lê Thu Hà, Trần Thị Tỷ.

THỜI HẠN BẢO HỘ: **20 năm**

Hà Nội, ngày 11 tháng 08 năm 2017


Kí Cục trưởng Cục Trồng trọt
Đỗ Xuân Thịnh

Cấp mới QĐ số: 220/QĐ-TT-VPBH
Cấp lại QĐ số:



5. LAN KIM TUYẾN HM – LC (Species: *Anoectochilus setaceus* Blume)



Lan Kim tuyến HM-LC: Moc Chau

6. Lan Kim tuyến HM - HG 30

6. HOÀNG TINH ĐỎ HM-HG (*Polygonatum kingianum* Coll et Hemsl.)



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
ĐỘC LẬP - TỰ DO - HẠNH PHÚC

BẰNG BẢO HỘ GIỐNG CÂY TRỒNG

SỐ BẢNG: 73.VN.2017

TÊN GIỐNG CÂY TRỒNG: **HOÀNG TINH ĐỎ - HM - HG**

THUỘC LOẠI: HOÀNG TINH ĐỎ - *Polygonatum kingianum* Coll. Et Hemsl.

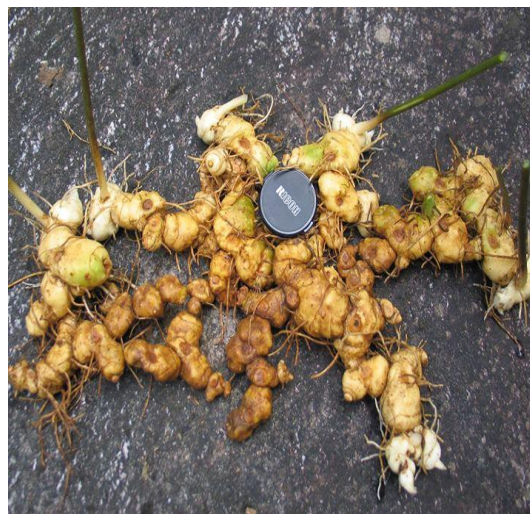
CHỦ SỞ HỮU: CÔNG TY CỔ PHẦN NÔNG LÂM NGHIỆP VÀ MÔI TRƯỜNG VIỆT NAM

TÁC GIẢ GIỐNG CÂY TRỒNG: Trần Thị Thu Hà, Bùi Văn Đông, Phạm Văn Điền và đồng tác giả: Khuất Hữu Trung, Nguyễn Thị Lan, Nguyễn Văn Quy, Nguyễn Thục Anh, Trần Thị Phương Thảo

THỜI HẠN BẢO HỘ: 20 năm

Hà Nội, ngày 11 tháng 08 năm 2017
Cục trưởng Cục Trồng trọt
TRẦN THỊ THU HÀ
Trần Thị Thu Hà

Cấp mới QĐ số: 220/QĐ-TT-VPBH
Cấp lại QĐ số:



Hoàng tinh do

Hoàng tinh trang

7. HÀ THỦ Ô HM-HG (*Fallopia multiflora* Thunb)



IFRAD's application for protection has been approved in 2017

No	Plant Variety	Species	Ownership	Researcher
8	Hà Thủ ô đồ	<i>Fallopia multiflora</i>	IFRAD	
9	Đẳng sâm	<i>Campanumoea javanica</i>	IFRAD	
10	Lan thạch hộc tía	<i>Dendrobium officinale</i> Kimura et Migo	IFRAD	
11	Khôi tía	<i>Ardisia silvestris</i> Pitard	IFRAD	
12	Trà hoa vàng	<i>Camellia hakodae</i> Ninh, Tr	IFRAD	



Hà thủ ô đồ
(*Fallopia multiflora*
Thunb)

Đẳng sâm (*Codonopsis javanica* (Blume)
Hook.f. & Thomson)

Lan thạch hộc tía
HN-HG (*Dendrobium officinale* Kimura et
Migo)

Khôi tía HN- H
(*Ardisia silvestris*
Pitard)

Trà hoa vàng HN-
DT (*Camellia chrysantha*)



IFRAD supported other applications for PVP have accepted in 2017

No.	Plant Variety	Species	Plant variety Owner	Plant breeder
13	Sâm Ngọc Linh QN	<i>Panax vietnamense</i> Ha & Grushv	Center for Conservation and Development	Nguyen Van Ut and others
14	Lan trầm tím HG	<i>Dendrobium Nestor</i>	CAFED	Nguyen Thi Lan and others
15	Giảo cổ lam BK	<i>Gynostemma pubescens</i> (Gagnep.) C. Y. Wu ex C. Y. Wu et S. K. Chen	Dang Kim Vui	Dang Kim Vui and others
16	Thông đất HM-HG	<i>Huperzia squarrosa</i>	CAFED and IFRAD	Tran Thi Thu Ha and others
17	Ba kích TG-QN		Center for Conservation and Development	Nguyen Van Ut and others
18	Sa Nhân NG-QN		<i>Panax vietnamense</i> Ha & Grushv	

13. SÂM NÚI NGỌC LINH QN (Species: *Panax vietnamense* Ha & Grushv)



Ngoc Linh tree



Ngoc Linh fruit



Ngoc Linh tuber



**14. Lan trầm tím HG
(*Dendrobium Nestor*)**



**15. Giảo cổ lam BK
(*Gynostemma
pubescens* (Gagnep.)**



**16. Thông đất HM- HG
(*Huperzia squarrosa*).**



**17. Ba kích TG - QN
(*Morinda officinalis* How)**



**18. Sa Nhân NG – QN
(*Semen Amomi*)**

Total of contracts for medicinal seedlings in 2017

Varieties	No of seedlings	Buyers	Notes
<i>Polycias fruticosa</i> (L.) Harms.) HM-TN	1,000,000	Vietnamese joint stock company of Agro-forestry and environmental development	19/ HĐKT/2017
<i>Morinda officinalis</i> How HM-QN	100,000	Ba Vi Forestry Seed Company Limited	90/HĐKT/2017
	50,000	Quang Ninh Sustainable Forestry Joint Stock Company	171/HĐKT/2017
	45,000	Seed Center of Quang Nam	
<i>Anoectochilus setaceus</i> Blume	100,000	Vietnamese joint stock company of Agro-forestry and environmental development	05/ HĐKT/2017
	56,000	Mr. Son's farm, Nghe An	10/ HĐKT/2017
<i>Zingber zerumbet</i> (L.) Sm.	100,000	Vietnamese joint stock company of Agro-forestry and environmental development	
<i>Semen Amomi</i>	85,000	Seed Center of Quang Nam	92/HĐKT/2017

Transferring breeding technologies for others by joining research/development projects

Varieties	Projects	Buyers	Periods
Đình lăng HM-TN	Package for transferred seedling breeding	Thanh Hoa Science and Technology Center	2017-2019
Ba kích tím HM-QN	Package for transferred seedling breeding and rights to produce seedlings	Ba Vi Forestry Seed Company Limited	2017-2018
		Quang Ninh Sustainable Forestry Joint Stock Company	2017
		Seed Center of Quang Nam	2017-2020
Lan kim tuyến, Đình lăng	Research project	Ministry of Science and Technologies/Northern mountainous region	2017-2020
Gừng gió	Package for transferred seedling breeding by <i>in vitro</i>	Vietnamese joint stock company of Agro-forestry and environmental development	2017
Sa nhân tím	Joint project for Rural Development	Seed Center of Quang Nam/ Ministry of Science and Technologies	2017-2020
Hoàng tinh đỏ	Package for transferred seedling breeding by <i>in vitro</i>	Vietnamese joint stock company of Agro-forestry and environmental development	2017-2019

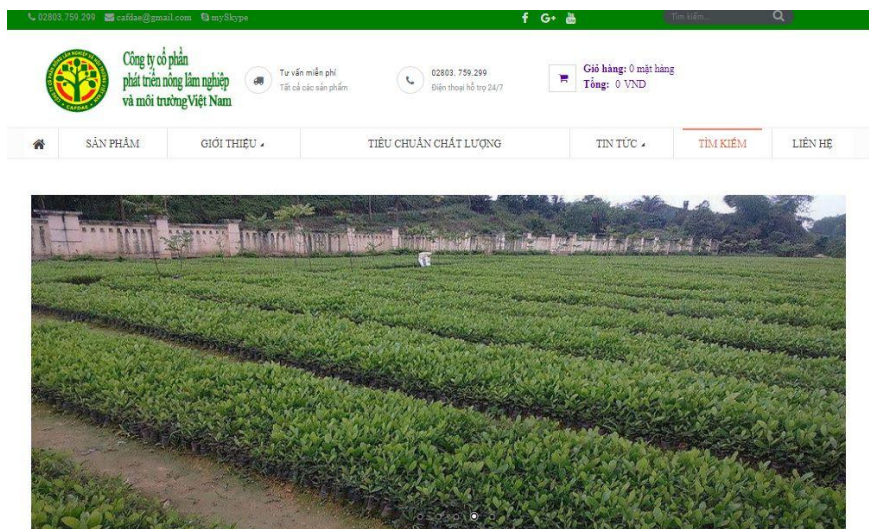
Commercialization: Own beneficiaries

- Plant breeders, research institution
 - Qualified to produce seedlings and selling in the markets at large scale.
 - Transferring techniques of seedling breeding for companies/enterprise/collectives/others through economic contracts/research projects/funding projects.
 - Expansion of international collaboration.
 - Increase number of contract funding for the institute/university → adapted a new strategy “autonomy” at the University.
 - Fair Competition in trade: investment to research and development will have chance to have more benefits for re-investment.

Other beneficiaries

- For Local seeds companies (LSC): Better environment for LSCs to play in the seed industry through sharing authority rights of PVP for producing seed/seedlings and trading.
 - Core value of business is protected (variety protection certification, seed copyright granted)
 - Many companies growing from “middle man” to technological/research/breeding companies.

Promote trading for companies in 2017



Vietnamese joint stock company of Agro-forestry and environmental development
 Address: 10 Group, Quyet Thang Commune, Thai Nguyen City, Thai Nguyen Province

Tax code: 4601292139 (19/05/2016)

Director: [Nguyễn Thi Lan](#)

Active date: 19/05/2016

Business license : 4601292139 ()

Name of company	Vietnamese joint stock company of Agro-forestry and environmental development QUANG NAM branch
Tax code	4601292139-002
Date of issue	10/05/2017
Place of management registration	Tax Department of Phu ninh district
Company adress	Highway 1A, An Tho Village, Tam An Commune, Phu Ninh District, Quang Nam Province, Vietnam

Name of company	Vietnamese joint stock company of Agro-forestry and environmental development – HAF GIANG
Tax code	4601292139-001
Date of issue	13/02/2017
place of management registration	Cục Thuế Tỉnh Hà Giang
Company adress	4 Group, Vi Xuyen Town ,Vi Xuyen Commune, Ha Giang Province, Vietnam

Challenges for commercialization of PVP in VN

➤ Legislation document

- ✓ Still complicated, some articles are not clear
- ✓ Punishment level is not strong enough

➤ Technical system

- ✓ Can not meet the demand due to rich of species
- ✓ Human resource
- ✓ Investment
- ✓ Technical Guidelines – especially for new species

PART III: STRATEGIC FRAMEWORK FOR TRADITIONAL PLANT PROTECTION AND TRADE AT THE TUAF

- Expand the scope and scale of research for high value indigenous tree species
- Breeding new varieties from existing varieties
- Establishing and forming the centers and research stations with special focus on medicinal plants
- Registration for seed protection and intellectual property on industrial production of seeds.
- Training to improve the resources, facilities for breeding, propagation and protection of breeds
- There is a mechanism to encourage scientists to participate in plant variety protection.....

Thanks for your attention!

Acknowledgement:

- Organizers:
- Vietnam PVP Office, Dr. Nguyen Thanh Minh
- Thai Nguyen University of Agriculture and Forestry (TUAF).

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Website: <http://ifrad.vn>

