

# Government Regulations and Interventions for the Production of High Quality Fruits for Exports in the Philippines

PRESENTED BY:  
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MANILA, PHILIPPINES





# OUTLINE OF PRESENTATION

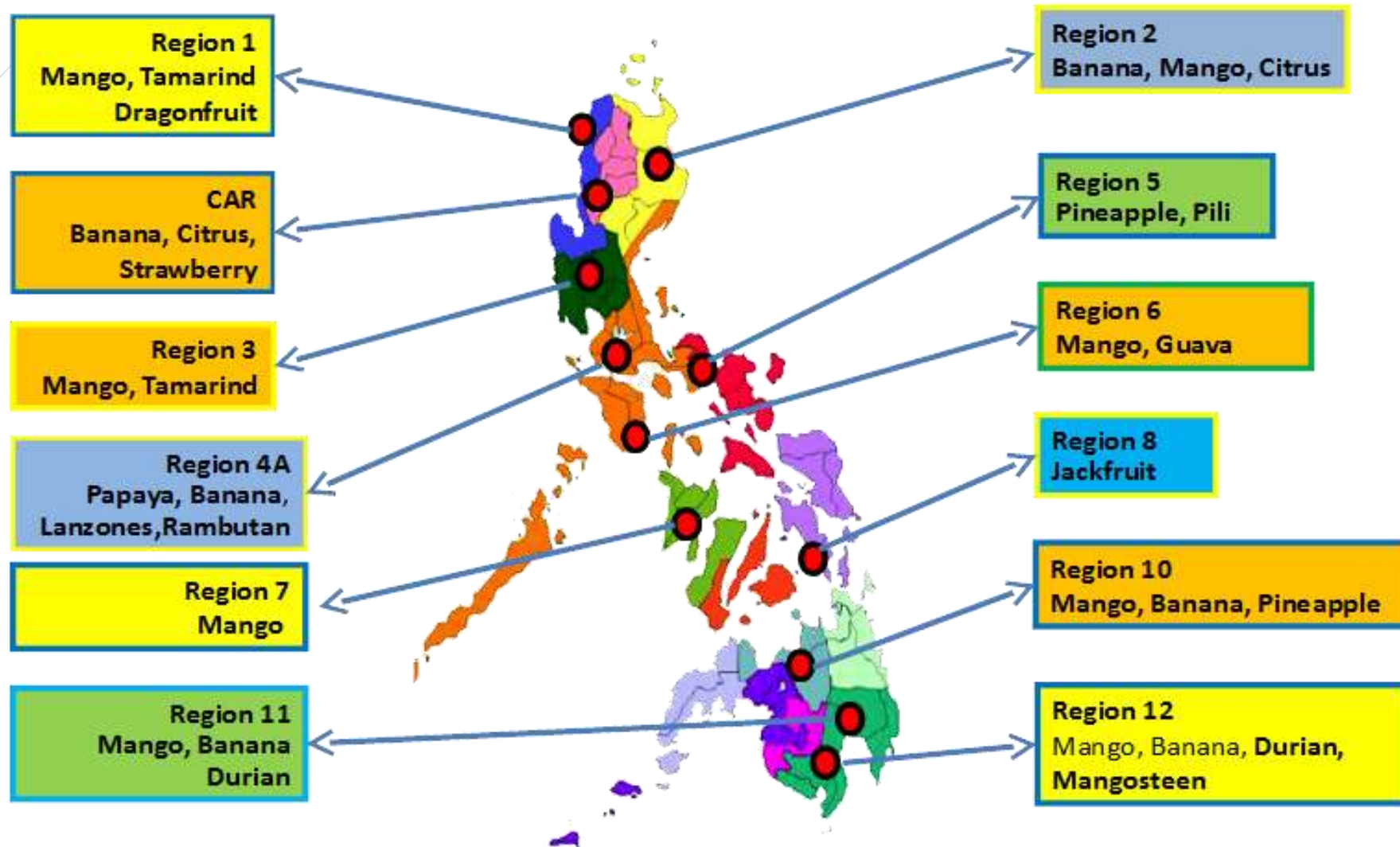
1. AN OUTLOOK AT THE FRUIT INDUSTRY
2. FRUITS: VOLUME OF PRODUCTION YEAR 2012- 2016 (in Metric Tons)
3. TOP 5 FRUIT EXPORT CROPS
4. BPI-REGULATORY ACTIVITIES
5. INTERVENTIONS
6. POTENTIAL EXPORTABLE FRUIT CROPS- R&D INITIATIVES

# AN OUTLOOK AT THE FRUIT INDUSTRY

- The Philippines has a rich diversity of tropical fruit wherein more than 20 different species are cultivated in the entire archipelago. Production system ranges from backyard to highly integrated operation with the latter catering to the export market. The farms are generally small in size from 1 to 5 hectares except for the multinational companies.
- Major fruit species grown in the country are: a) Banana (*Musa sp.*); b) Pineapple (*Ananas comosus*); c) Mango (*Mangifera indica*); d) Papaya (*Carica papaya*); e) Calamansi (*Microfortunella microcarpa*); f) Durian (*Durio zibethinus*); g) Jackfruit (*Artocarpus heterophyllus*); h) and Lanzones (*Lansium domesticum*)



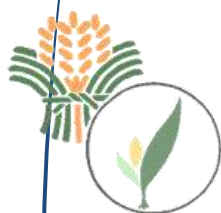
# Major Producing Areas, by Region



Source: PCAARRD

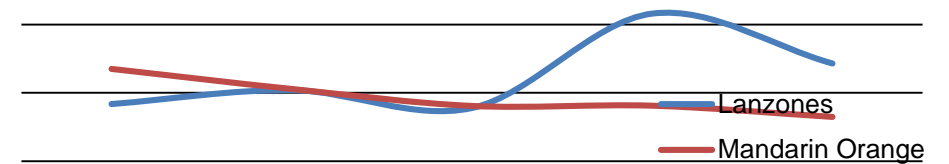
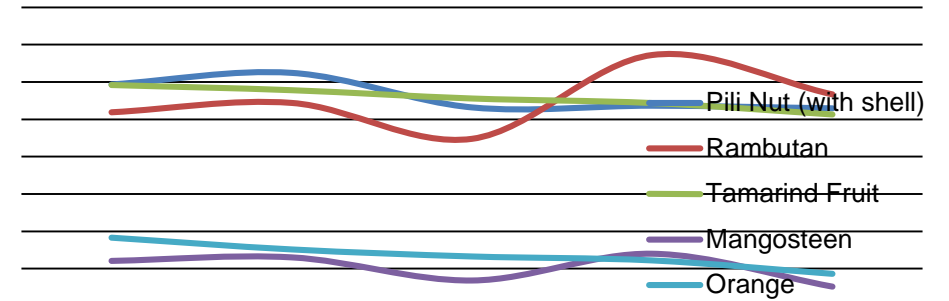
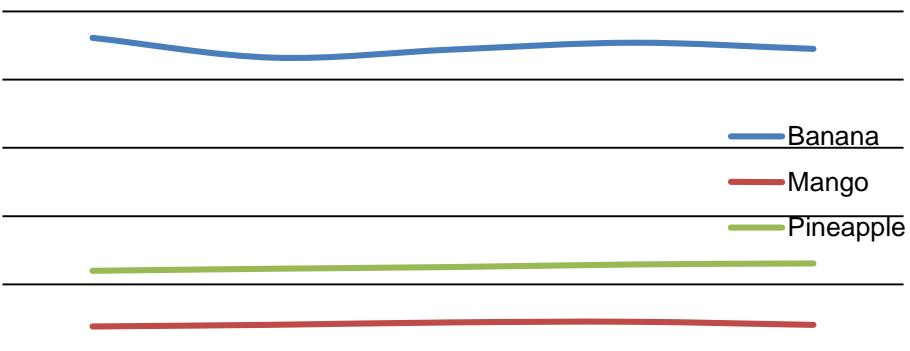
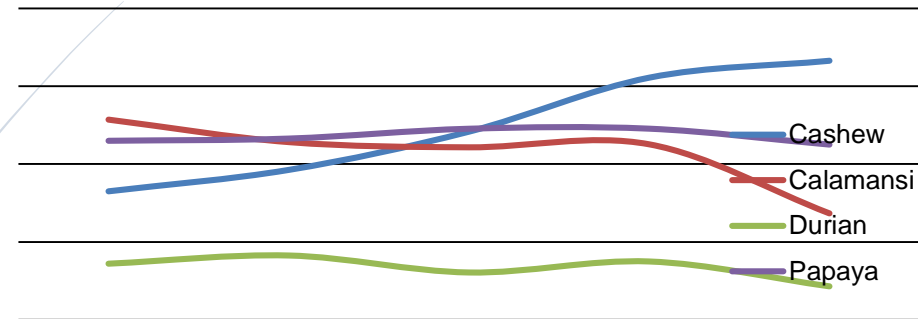
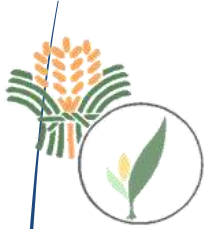
# FRUITS: VOLUME OF PRODUCTION YEAR 2012- 2016 (in Metric Tons)

Source: PSA, 2017



CROP	YEAR				
	2012	2013	2014	2015	2016
Cashew (ripe fruit with nuts)	132,541	146,289	170,853	205,531	216,398
Pili Nut (with shell)	7,933	8,243	7,316	7,362	7,291
<b>Banana</b>	<b>9,226,768</b>	<b>8,646,417</b>	<b>8,884,857</b>	<b>9,083,929</b>	<b>8,903,684</b>
Banana Cavendish	4,694,655	4,230,089	4,448,460	4,566,907	4,638,328
Banana Lakatan	942,938	930,032	954,856	970,496	898,515
Banana Saba	2,645,893	2,557,109	2,567,495	2,627,129	2,474,199
Calamansi	178,549	164,091	160,740	162,676	118,248
Durian	85,961	91,212	80,334	87,382	71,444
Lanzones	14,190	15,207	13,899	20,814	17,160
Mandarin Orange	16,755	15,287	14,045	14,064	13,243
<b>Mango</b>	<b>768,410</b>	<b>816,378</b>	<b>885,038</b>	<b>902,739</b>	<b>814,055</b>
Mango Carabao	630,596	671,929	730,140	740,239	659,014
Mangosteen	3,209	3,303	2,686	3,400	2,522
Orange	3,827	3,513	3,325	3,219	2,861
Papaya	164,913	166,336	172,628	172,650	162,481
<b>Pineapple</b>	<b>2,397,745</b>	<b>2,458,528</b>	<b>2,507,098</b>	<b>2,582,699</b>	<b>2,612,474</b>
Rambutan	7,189	7,440	6,479	8,723	7,668
Tamarind Fruit	7,921	7,782	7,558	7,436	7,128
<b>TOTAL</b>	<b>21,929,993</b>	<b>20,959,185</b>	<b>21,617,807</b>	<b>22,167,395</b>	<b>21,626,713</b>

## FRUITS: VOLUME OF PRODUCTION YEAR 2012- 2016 (in Metric Tons)



Source: PSA, 2017



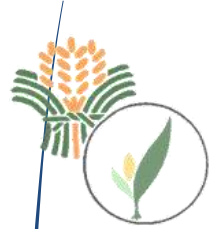
# STATUS OF EXPORT

- For export, the top five (5) fruit crops for 2016 are:
  1. Banana Cavendish (2,278,326.333 MT)
  2. Pineapple (400,550.996 MT)
  3. Papaya (54,948.0980 MT)
  4. Banana varieties (18,233.882 MT)
  5. Mango (10,916.966 MT)

Source: NPQSD, 2016

Based on Issuances of Phytosanitary Certificate as required by country of destination





**MANGO**



**PINEAPPLE**

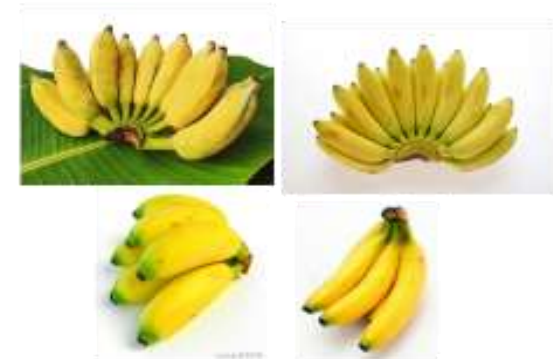
**TOP 5  
Export  
Fruit Crops**



**BANANA  
CAVENDISH**



**PAPAYA**

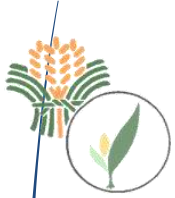


**Other Banana Varieties**



**BANANA (CAVENDISH) EXPORT**  
(in Metric Tons)

Destination	2012	2013	2014	2015	2016
Bahrain	8,574.824	8,767.093	6,641.032	10,006.137	7,037.551
Brunei	244.645	147.920	149.760	202.280	120.310
China	507,845.730	339,318.072	482,441.040	697,937.382	605,108.566
Egypt	6,743.894	720.926	159.570	130.812	200.670
Hongkong	15,842.285	10,586.633	7,861.348	16,869.201	7,219.478
Indonesia	1,613.306	160.160	536.015	399.851	81.327
Iran	302,931.140	210,328.378	257,340.647	182,273.076	257,882.796
Japan	1,933,437.750	1,091,731.967	859,324.013	879,852.109	624,209.040
Jordan	2,314.610	54.918	146.672	110.648	26,835.552
KSA	207,321.566	169,974.851	156,441.436	157,779.042	228,655.634
Kuwait	134,150.271	167,937.508	188,220.365	164,026.839	128,197.318
Malaysia	4,931.807	7,311.343	9,312.422	16,675.658	8,892.642
New Zealand	59,087.938	50,738.404	54,639.112	21,974.633	12,758.121
Oman	5,228.434	7,729.330	9,593.622	8,149.552	5,856.860
Qatar	16,611.978	17,611.320	18,413.453	17,772.783	13,718.908
Russia	30,919.283	23,144.706	20,336.808	15,065.809	2,607.855
Singapore	21,735.760	22,032.121	26,742.324	24,364.544	12,575.238
Korea	677,302.354	718,178.715	303,008.414	359,033.206	256,839.005
UAE	117,011.515	92,101.898	140,635.484	89,330.673	69,659.668
Netherlands	76.190	372.563	156.720	39.182	0.047
Iraq	2,610.511	45.120			8,294.599
Mongolia	861.720	1,129.576	1,030.380	1,213.965	679.53
Others	5,010.793	287.113	41.583	22.660	895.582
<b>GRAND TOTAL</b>	<b>4,062,408.312</b>	<b>2,940,410.633</b>	<b>2,543,172.217</b>	<b>2,663,230.041</b>	<b>2,278,326.333</b>



## Pineapple Export (In Metric Tons)

Destination	2012	2013	2014	2015	2016
Australia	3.600	7.550	165.410		
Bahrain	356.980	554.465	780.960	596.160	1,310.150
Belgium	22.862	66.283	85.307	46.463	370.938
Brunei	27.482	57.210	1,771.580	15,757.110	79.220
China	21,179.756	31,493.218	36,112.738	69,411.787	62,888.737
Egypt	166.400	280.900	712.970	283.940	148.360
Germany		0.082	345.285		78.840
Hongkong	3,731.332	3,999.798	4,993.774	4,930.120	4,101.528
Iran	2,018.920	2,906.497	4,143.380	7,579.136	5,077.360
Italy			0.068	1,752.252	61.853
Japan	148,179.838	170,538.100	183,630.555	148,864.116	178,491.268
Jordan	525.740	5,732.370	304.200		
Korea	61,910.133	66,599.788	73,555.424	68,307.278	77,053.680
KSA	8,956.634	10,289.754	11,447.668	13,723.074	8,079.903
Kuwait	6,056.670	6,020.120	13,536.620	16,701.094	12,502.764
Lebanon	351.380	1,369.380	1,461.820	1,683.480	874.200
Malaysia	277.380	271.440	373.360	414.860	477.150
Middle East					2,014.594
Netherlands		34.498		18.518	42.065
New Zealand	6,248.006	6,519.818	9,861.879	6,289.670	8,188.000
Oman	317.475	502.100	130.780	615.240	731.352
Pakistan	50.790	43.680	41.600	15.900	
Qatar	759.100	1,758.250	2,172.620	3,010.912	2,353.270
Russia	969.010	1,036.060	648.603	634.590	342.180
Singapore	55,865.436	3,147.202	5,844.157	8,546.732	6,034.110
Taiwan	1,475.368	2,887.771	3,902.475	4,960.597	6,907.199
Thailand	40.900		0.052		2.613
UAE	26,073.222	33,722.912	30,518.007	33,062.233	21,742.333
UK		0.040	1,433.460		531.250
OTHERS	0.250	47.752	302.410	0.030	66.080
<b>GRAND TOTAL</b>	<b>345,564.663</b>	<b>349,887.037</b>	<b>388,277.192</b>	<b>407,205.331</b>	<b>400,550.996</b>

## PAPAYA EXPORT

(in Metric Tons)

Destination	2012	2013	2014	2015	2016
Canada			0.2155	0.0450	6.0665
China	364.2395	439.3270	546.9800	289.0610	357.868
Dubai			9.6475	1.7180	0.341
Hongkong	182.0830	165.6400	144.0990	145.8700	41.583
Japan	2,568.2870	2,144.4800	1,902.9735	1,020.5785	314.111
Jebel Ali			7.3300	12.0800	2.9415
Korea	48.4200	28.3300	144.3950	148.3825	53643.8445
Kuwait	0.0020			0.4320	20.28
New Zealand	533.3800	678.9030	539.1360	469.2680	360.0205
Singapore	468.4100	282.7500	272.9800	190.4535	200.2355
UAE	25.8500	26.3410	26.3450	1.4850	
Qatar	1.6500			0.7500	0.341
Indonesia	0.0110			0.0153	
KSA	0.2100	0.1050		0.1080	0.141
Malaysia	9.4950	0.0550	17.9150	5.6820	0.3245
Pakistan	0.8300				
Russia	5.3900	29.1205	10.8950	1.4990	
Belgium			0.0825	0.0250	
Doha			0.9150		
Germany			0.0004		
<b>GRAND TOTAL</b>	<b>4,208.2575</b>	<b>3,795.0515</b>	<b>3,623.9094</b>	<b>2,287.5839</b>	<b>54,948.0980</b>

Source: NPQSD

\* Based on Issuances of Phytosanitary Certificate as required by country of destination

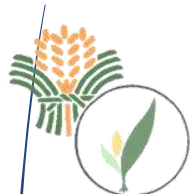
# Mango Export in Metric Tons

Destination	2012	2013	2014	2015	2016
Australia		5.7700		0.0400	0.3500
Austria	0.0180	1.1280	1.8650	2.1500	0.4050
Bahrain	1.6000	4.0650	4.2400	5.1750	3.5900
Canada	4.6877	6.8710	57.5570	144.7930	242.7150
China	6.0300	16.6200	12.1200	4.5940	21.4180
Dubai			3.6600	3.8970	2.0400
France	0.0440	0.0200	0.0350	0.0250	0.0250
Germany	0.0930	0.1200	1.7921	0.1580	0.5420
Greece	2.6170	1.3650	0.3490		
Hongkong	9,155.6637	8,983.6050	7,251.9848	7,867.2380	5,534.4740
Italy	0.0648	0.7601	0.0150	0.3561	0.0200
Japan	2,126.9336	1,929.6140	1,267.7970	466.0646	585.0360
Jebel Ali			10.6500	9.0790	8.1750
Korea	1,046.1620	2,970.9096	4,781.4503	4,804.9950	3,702.2690
KSA	30.6799	30.7243	24.2533	17.3938	20.1840
Kuwait	5.8130	10.4220	8.5170	5.1910	5.9940
Malaysia	2,621.3970	1,322.8130	559.2600	788.7242	480.0500
Netherlands	3.5000	3.3600	1.0040	8.2650	9.1150
New Zealand	17.9850	7.8500	12.5000		
Qatar	13.0793	16.8240	28.9270	10.6440	19.6050
Russia		0.0010	9.0000		
Singapore	201.8566	669.8186	282.6989	397.8105	232.8780
Switzerland	10.1110	0.1549	0.0950	0.1110	0.9180
Thailand	0.0140	0.0150			
UAE	27.1783	24.9498	24.7361	11.2058	29.6580
UK	40.8423	16.3990	0.0862		2.8360
OTHERS	0.3606	1.5732	22.1602	15.7868	014.511
<b>Grand Total</b>	<b>15,316.7164</b>	<b>16,026.0025</b>	<b>14,366.7526</b>	<b>14,563.7056</b>	<b>10,902.4550</b>

Source: NPQSD

\* Based on Issuances of Phytosanitary Certificate as required by country of destination

## BANANA EXPORT (DIFFERENT VARIETIES EXCLUDING CAVENDISH) (In Metric Tons)



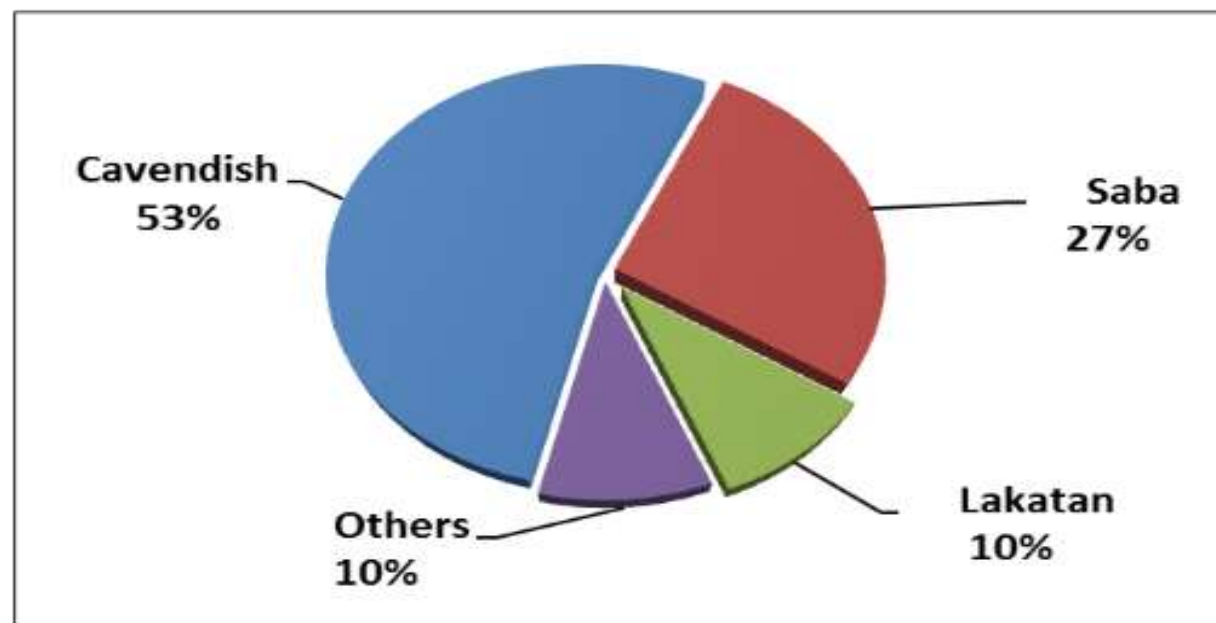
VARIETY	2016
Banana (Cardava)	8,920.243
Banana (Saba)	2,534.691
Banana (Lakatan)	2,147.387
Banana (Balangon)	1,038.041
Banana (Curare)	157.200
Banana (Morado)	139.572
Banana (Tindok)	93.950
Banana (other varieties)	6.613
<b>GRAND TOTAL</b>	<b>18,233.882</b>





Banana production this year 2016 is 8,903,684 which constitute Cavendish at 4,639,328, Saba at 2,474,199, Lakatan at 898,515 and the others are remaining different varieties.

Scn. Name: *Musa acuminata* "Cavendish"  
Family Name: Musaceae



Banana: Percent distribution of production by variety,  
Philippines,

Source:, Phil. Statistics Office

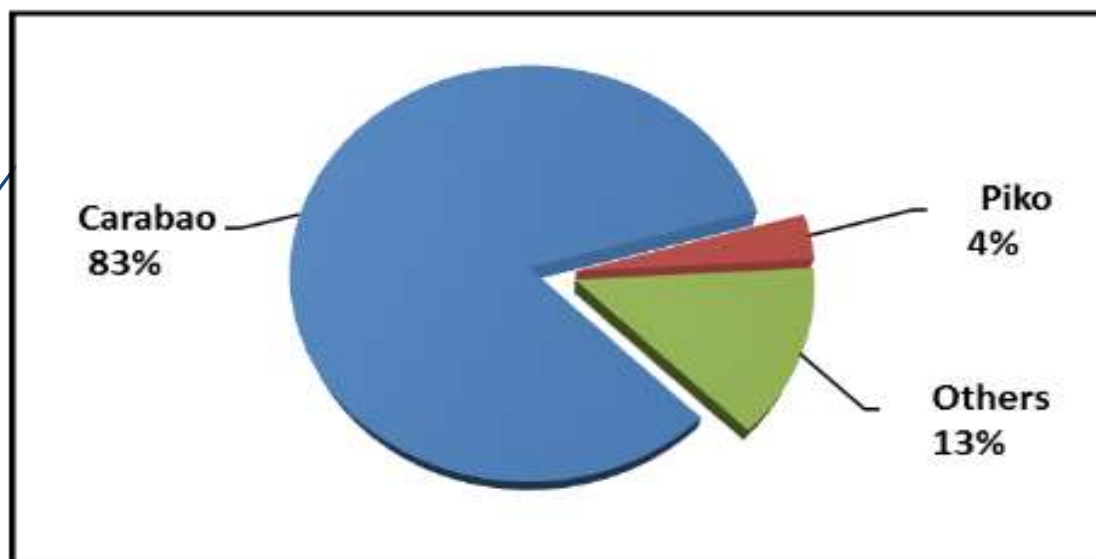


Mango production this 2016 amounts to 814,055 of which Carabao mango totaled 659,014 MT

## MANGO

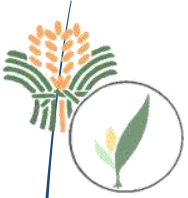
Scn. Name: *Mangifera indica* Linn.

Family Name: Anacardiaceae



Mango: Percent distribution of production by variety,

Source:., Phil. Statistics Office



### **PINEAPPLE**

Scn Name: ***Ananas comosus (L.) Merr.***

Family Name: Bromeliaceae

The country produced 2,612,474 MT for 2016 .



### **PAPAYA**

Scn. Name: ***Carica papaya L.***

Family: Caricaceae

The country produced 162,481.MT for 2016.



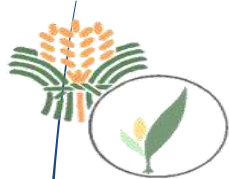


# REGULATORY



# REGISTRATION

Registered Varieties (NSIC – TWG)



Plant Nursery  
(Production Div.)

Validation and  
Evaluation

- RPT
- F/S trees
- (PMC-NSQCS)

Validation and Inspection

## ACCREDITATION

## CERTIFICATION

Accredited Nursery

Certified trees and seedlings



# BUREAU OF PLANT INDUSTRY ACTIVITIES

## ➤ REGULATORY

1. **Plant Nursery Accreditation** program wherein plant nurseries will apply and if the requirements are met, they will be given certificates and they are priorities in government procurements.
2. Accredited plant nurseries for fruits totaled 88 fruit crop nurseries for 2016.



# BUREAU OF PLANT INDUSTRY ACTIVITIES

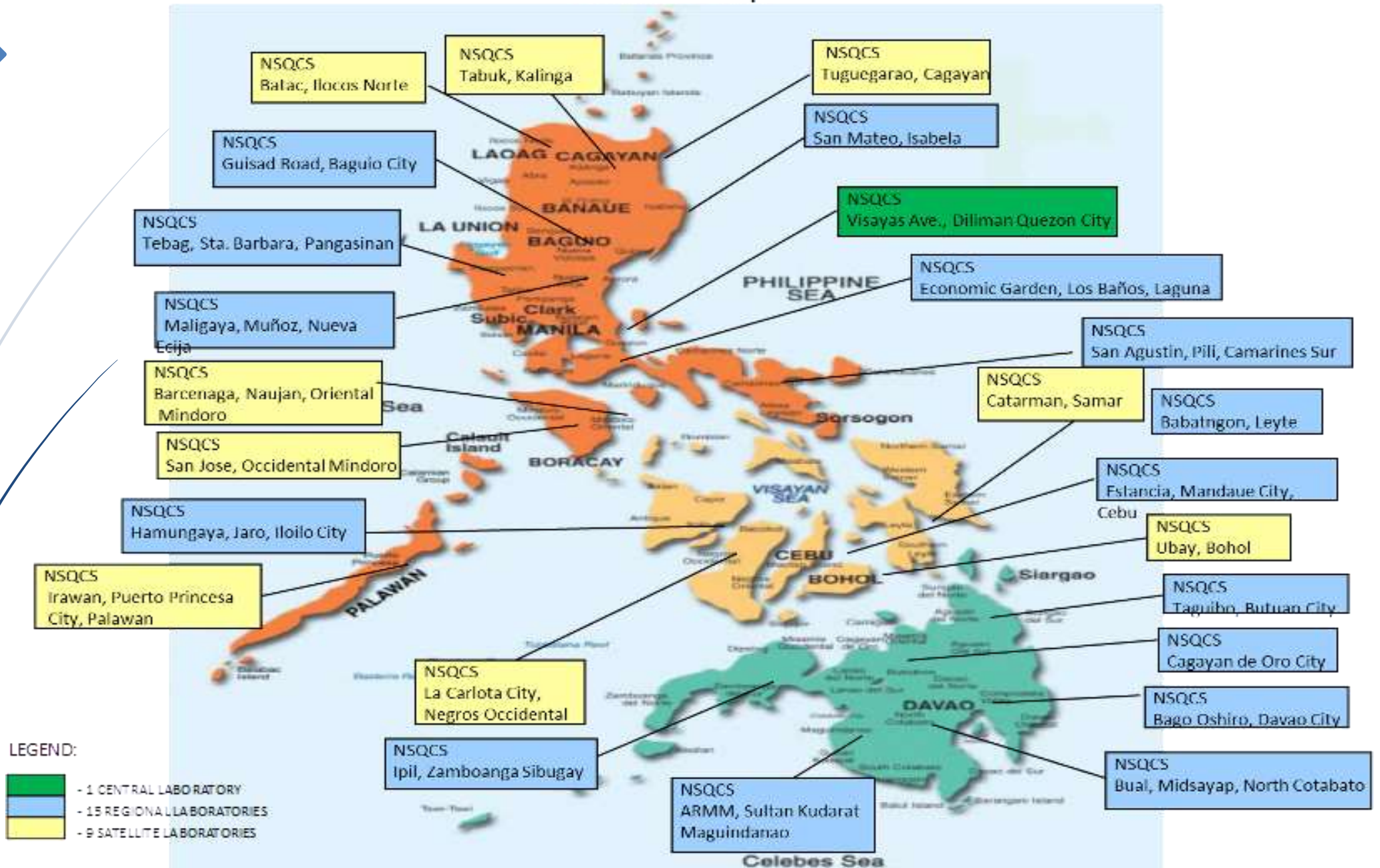
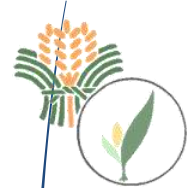
## ► REGULATORY

**2. Plant Material Certification** program wherein foundation trees, scion trees, clonal trees and budwood trees are subject for certification to ensure that all produce are of true-to-type of the varieties and clean materials. There are a total of 120,689 seedlings certified and 3,807 trees certified for 2016. This program is an activity of the National Seed Quality Control Services (NSQCS) which has 24 regional and satellite seed laboratories all over the





# National Seed Quality Control Services Locator Map





## Sources of Seed/Plant Material Registered for Certification

**Parent Tree (PT)** – are trees that have been surveyed, evaluated, indexed, registered and approved in accordance with the parameters approved by the National Seed Industry council to serve as source of plant propagules.



MMSU Gold

**Foundation Grove** – an area where not more than four (4) registered PT are planted in government institutions as source of planting materials for scion groves or plant propagules.

**Scion Grove** – an orchard of different registered cultivars from foundation grove where accredited nursery operator shall be required to obtain their plant propagules for the production of certifiable plant materials



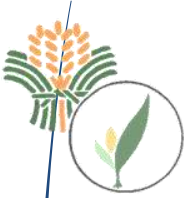
**Seed/Clonal Garden** – is an orchard which will be the source of seeds for the production of sexually propagative plant material for plantation crops like coffee, cacao and rubber

**In-Vitro Laboratories** – place where mass production and multiplication of diseases-free propagules is undertaken.





# BUREAU OF PLANT INDUSTRY ACTIVITIES



## ► REGULATORY

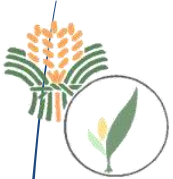
### 3. The Good Agricultural Practices (GAP) certification program.

Pursuant to the Food Safety Act of 2013, the PhilGAP certification program is currently on transition period to the DA-Bureau of Plant Industry (DA-BPI) with the full implementation starting 2017. The standards, guidelines, protocols and code of practices are developed and aligned to the international norms and best practices. The elements of the PhilGAP program are anchored to the ASEAN GAP.

It contains four modules, namely on: (1) **food safety**; (2) **produce quality**; (3) **environmental management**; and (4) **workers health, safety and welfare**. Among the relevant developed Philippine National Standards (PNS) are code of practices for fruits and vegetable farming, corn, mango, onion, banana, rice, papaya, coffee and cassava. A total of 82 farms for various crop commodities covering 22,595 hectares are GAP certified.



# BUREAU OF PLANT INDUSTRY ACTIVITIES



## ➤ REGULATORY

### 4. Plant Products Safety Services

At present, Plant Product Safety Services Division (PPSSD) is the one implementing the GAP program and at the same time is mandated to regulate and monitor fruits and vegetable nationwide for pesticide residues, microbiological and chemical contaminants. There are 5 laboratories in strategic areas in the country to cater the public. The Division also conducts part of Food Risk Assessment of GM together with other agencies involved in the program as well as inspection of packing facilities and farms for food safety requirement for GAP.



# BUREAU OF PLANT INDUSTRY ACTIVITIES

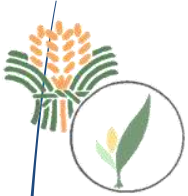
## ➤ REGULATORY

### 5. National Plant Quarantine Services

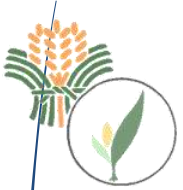
NPQSD is the regulatory arm of the Philippine Department of Agriculture (DA) when it comes to matters of import, export, domestic movement as well as market access of plants and plant products.

It is committed to fulfill its mission to protect the Philippine agriculture from introduction, establishment and spread of pests, and facilitate safe trade of plants, planting materials and plant products. The vision of the NPQSD is to be a professional and highly-recognized regulatory service on plant quarantine ensuring efficient border control and safe agricultural trade.

NPQSD has focused in the continuous upgrading of technical capacities of personnel to effectively implement its mandate and efficiently deliver the plant quarantine services to its stakeholders. To date, a total of 84,756 clients were served wherein 23,217 were female and 61,539 males. For group of clients served, there were 17,790 clients from the private and 237 clients from the government.



# BUREAU OF PLANT INDUSTRY ACTIVITIES



## ➤ PLANT QUARANTINE SERVICES

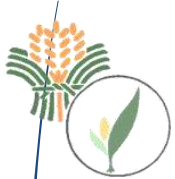
1. ISSUANCE OF REGULATORY DOCUMENTS
2. INTERCEPTION, CONFISCATION AND DISPOSAL OF INTERCEPTED COMMODITIES
3. LABORATORY OPERATION AND DIAGNOSTIC SECTION
4. TRADE FACILITATION
5. PEST RISK ANALYSIS
6. SANITARY AND PHYTOSANITARY (SPS)
7. QUARANTINE POLICY
8. Monitoring





# INTERVENTIONS

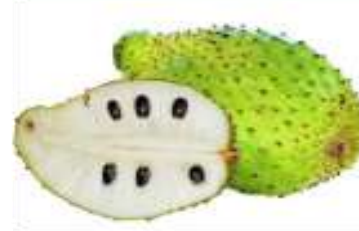
- ✓ The High Value Crops Development Program (HVCDP) has a major role in the implementation of programs and projects pertaining to fruit crops activities. Highlights and support for the industry were focused on Banana Fusarium wherein DA-HVCDP RFOXI organized Task Force Fusarium to make an action plan for information awareness campaign, mapping and training of banana growers. Banana Giant Cavendish Tissue Culture Variant (GCTCV) 218 and 219 resistant varieties were developed.
- ✓ The US Government declared the Philippines as Mango Pulp and Seed Weevil free on Feb. 8, 2013 except Palawan,. For export Trial shipment of carabao mangoes to Dubai, UAE was done by DA RFO 12 (AMAD and HVCDP) in 2015. This is one of the outputs of the DA's participation to the Middle East Natural and Organic Products Expo (MENOPE).



- ✓ A techno demo for different varieties of pineapple particularly MD2, Ulam Pine and Local variety were conducted in the following areas: Lucena, Quezon; Daet Camarines Norte; Calauan, Laguna; and Silang, Cavite. UlamPine, however is a variety that is protected under Republic Act 9168 otherwise known as Plant Variety Protection Act of 2002.
- ✓ BPI distributed a total of 333,943 pieces of assorted fruit seedlings to beneficiaries, farmers, walk-in clients and students while parent, foundation, scion trees certified totaled 2,423 and 172,585 certified seedlings for 2016, which is 186.48% increase from 2013 which is 93,845 seedlings. Accredited plant nurseries for fruits totaled 88 fruit crop nurseries.
- ✓ In 2014, Giant Cavendish Tissue Culture Variant (GCTCV) 218 and 219 resistant varieties were developed by Bioversity International where found to be resistant against fusarium wilt under Philippine conditions thus the mass production of such variety is continuously conducted. Distribution of planting materials is on-going.

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- ✓ **Philippine highland bananas to reach US shores.** Eight years after requesting for market access for Philippine bananas, the Department of Agriculture (DA) through the Bureau of Plant Industry-Plant Quarantine Services (BPI-PQS) send-off the country's initial shipment of 6.561 metric tons highland bananas to the United States of America at the Mindanao International Container Terminal in Tagoloan, Misamis Oriental last September 2013.
  - ✓ HVCDP supported the **conduct of the supply/value chain study (benchmarking)** for the 11 selected agricultural commodities (mango, chili-red/hot, green mongo beans, peanut, shallots, tamarind, saba banana, garlic, lanzones, mangosteen). The study aims to support and strengthen the development of competitive agricultural products that meet specific market demands and identify ways and means to improve the local value/supply chain of selected agricultural commodities.

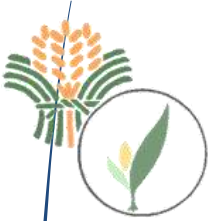
# POTENTIAL EXPORTABLE FRUIT CROPS



HOW CAN WE  
DO IT?



# R&D INITIATIVES



- Use of Recommended Varieties for these important fruits
- Multiplication and micro-propagation of disease-free planting materials
- Improvement of protocols for plant nursery management
- Development and management strategies against insect pests and diseases
- Enhancement of pre and post harvest management practices



# R&D INITIATIVES

- Improvement of packaging and marketing scheme
- Promotion and technology transfer of improved production practices (ICM and IPM)
- Packaging and distribution of IEC materials
- Impact assessment studies



**THANK YOU FOR  
LISTENING!!!**

