



**Asia-Pacific  
Economic Cooperation**

# Policies to reduce post-harvest food loss in Vietnam

**Taipei, 25-26/7/2019**

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# Content

1. Agricultural post harvest loss
2. Challenging for reducing post harvest loss
3. Policy to reduce post harvest loss

# What we refer to “Food loss”?

## THE DIFFERENCE BETWEEN

### FOOD LOSS

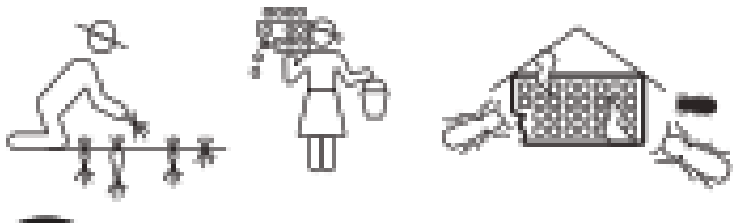
TAKES PLACE AT

**Production**

**Postharvest**

**Processing Stages**

**Distribution**



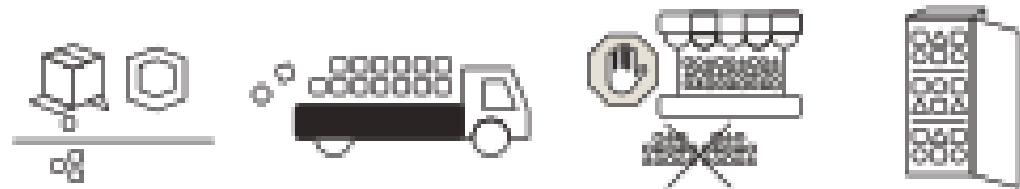
&

### FOOD WASTE

HAPPENS AT

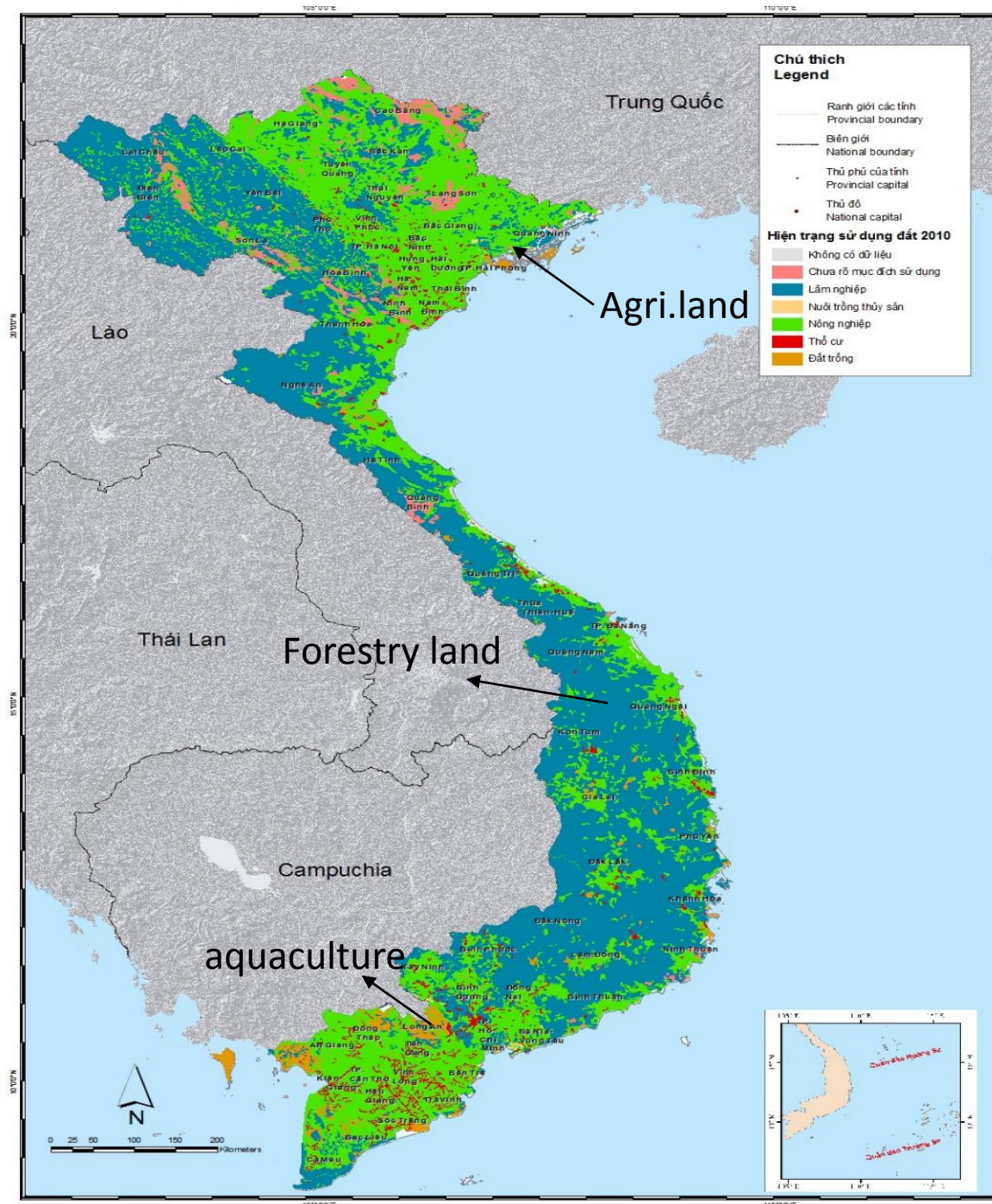
**Retail**

**Consumption**



- **“Food loss** represents the amount of food postharvest, that is available **for human consumption** but is not consumed for any reason. It includes cooking loss and natural shrinkage (for example, moisture loss); loss from mould, pests, or inadequate climate control; and food waste (USDA).

# Vietnam agriculture



## Land:

- Land area: 33,1 million ha
- Agri-Forestry-Fishery land : 27,3 million ha
- Agricultural land: 11,5 million ha

## Population

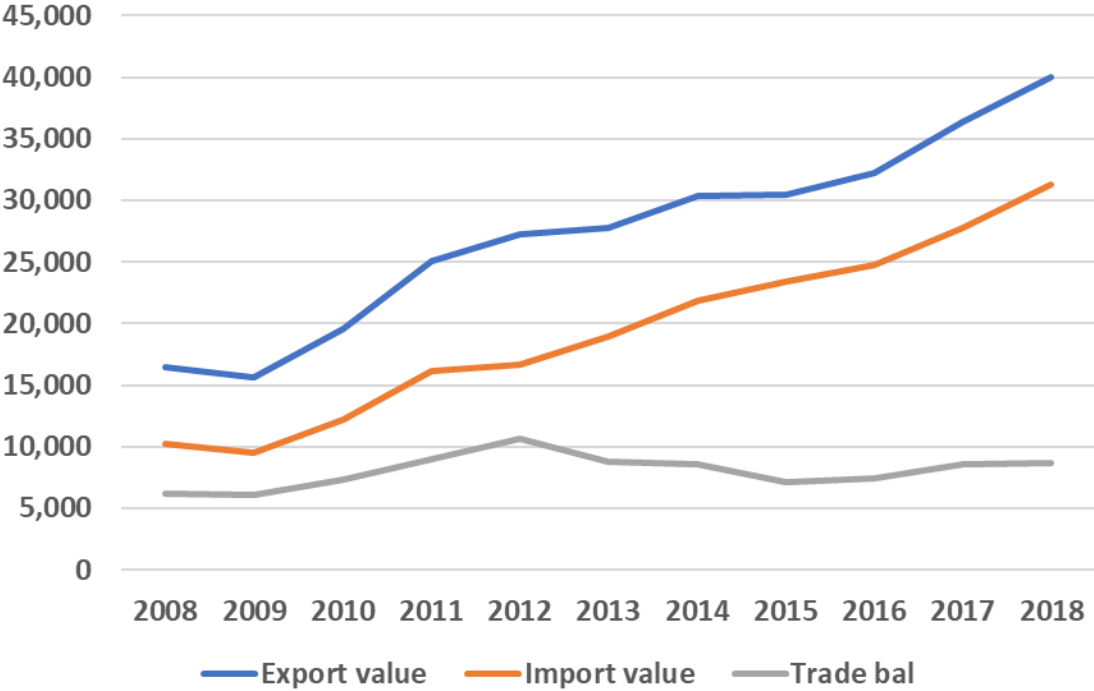
- Total: 96 million people (2019)
- 70% population in rural.

## Agriculture:

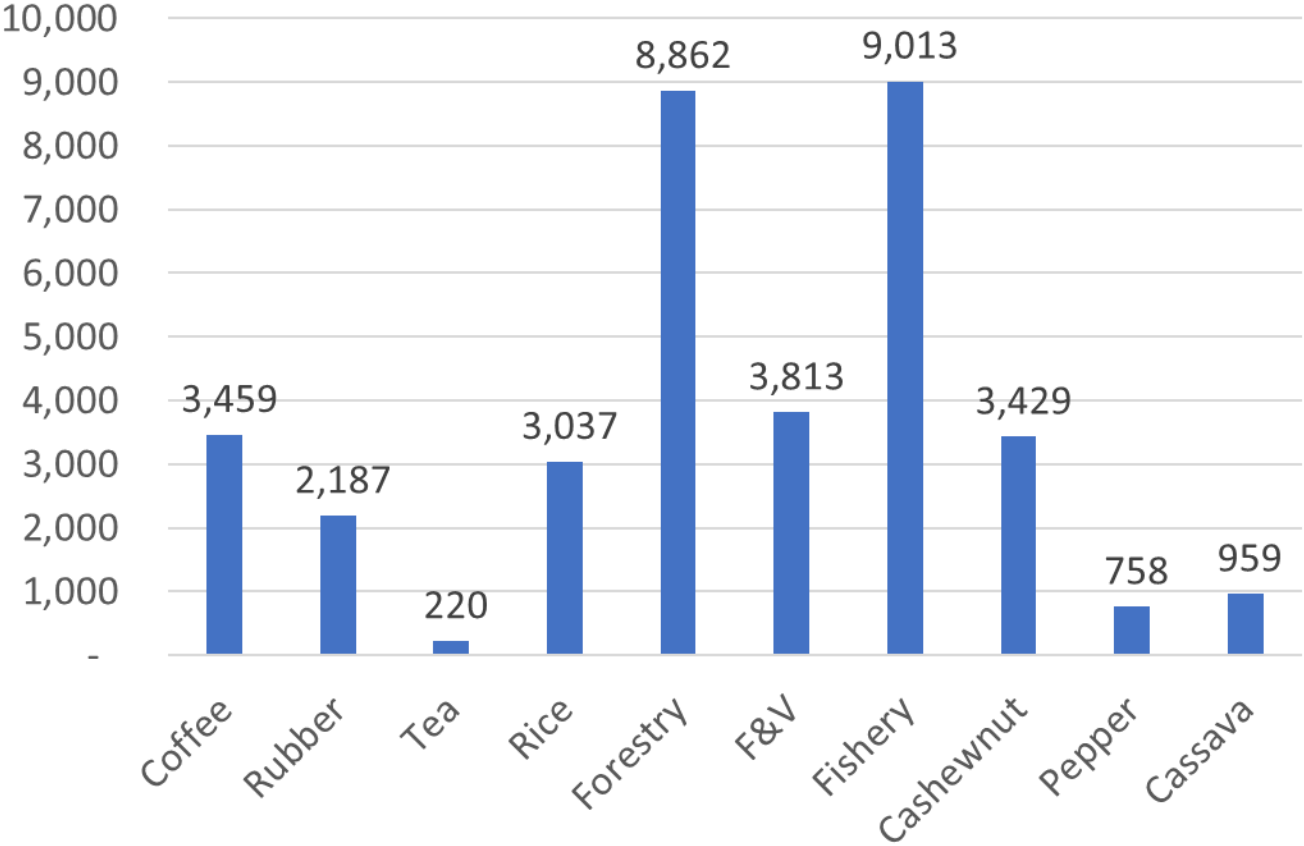
- Agricultural GDP: 15% of total GDP (2018)
- Agricultural labour: 38% (2018)
- Agri. Export value: 40.02 bil.USD

# Vietnam: A Big Agri. Exporter

### Agri. Trade balance (bil. USD)



### Main Agri. Export Value in 2018 (mil. USD)



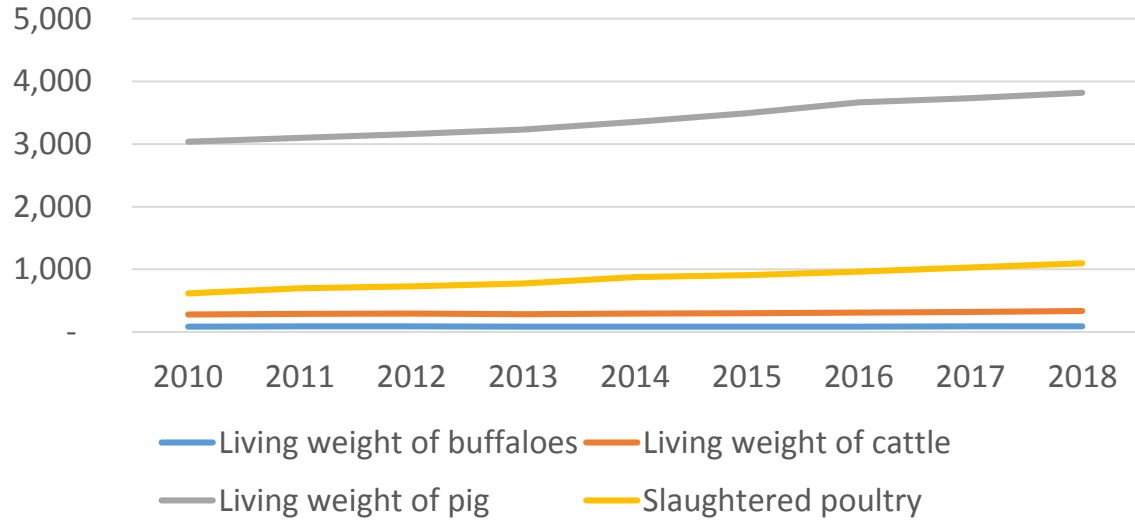
# Vietnam : big food supplier

COMMODITY	2018 OUTPUT (000 TONS)
<b>Paddy</b>	<b>43,979</b>
<b>Vegetable</b>	<b>17,093</b>
<b>Fruit</b>	
Orange, madrin	840
Pinnapple	674
Banana	2,105
Mango	788
Longan	541
Lychee	719
Coconut	1,565
Pumelo	643
<b>Liveweight meat</b>	<b>5,368</b>
Pig	3,816
Poultry	1,098
Buffalo	92
Cattle	335
Other	28
<b>Catfish</b>	<b>1,418</b>
<b>Shrimp</b>	<b>804</b>

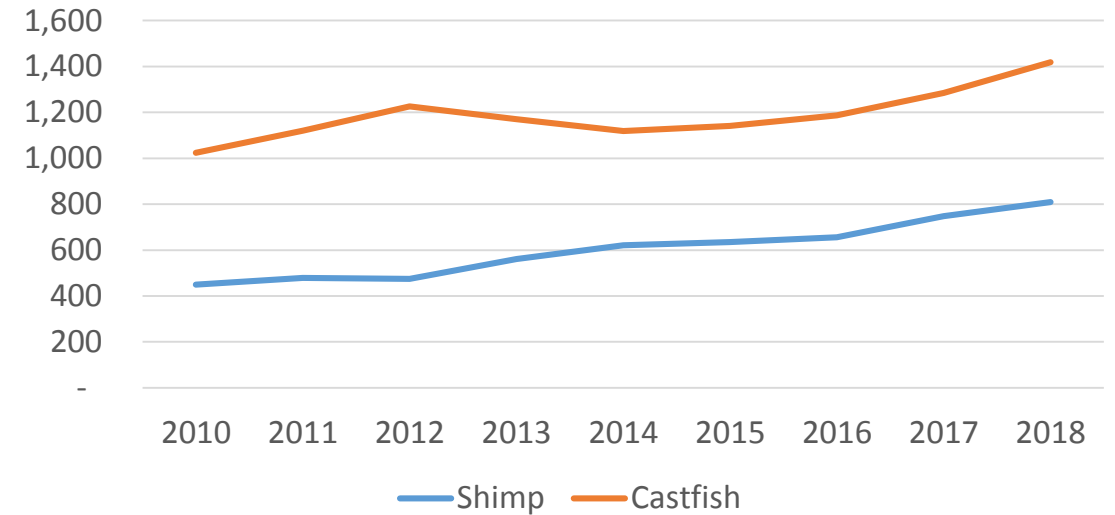
Source: GSO 2018

# Growth in output of agro-commodities

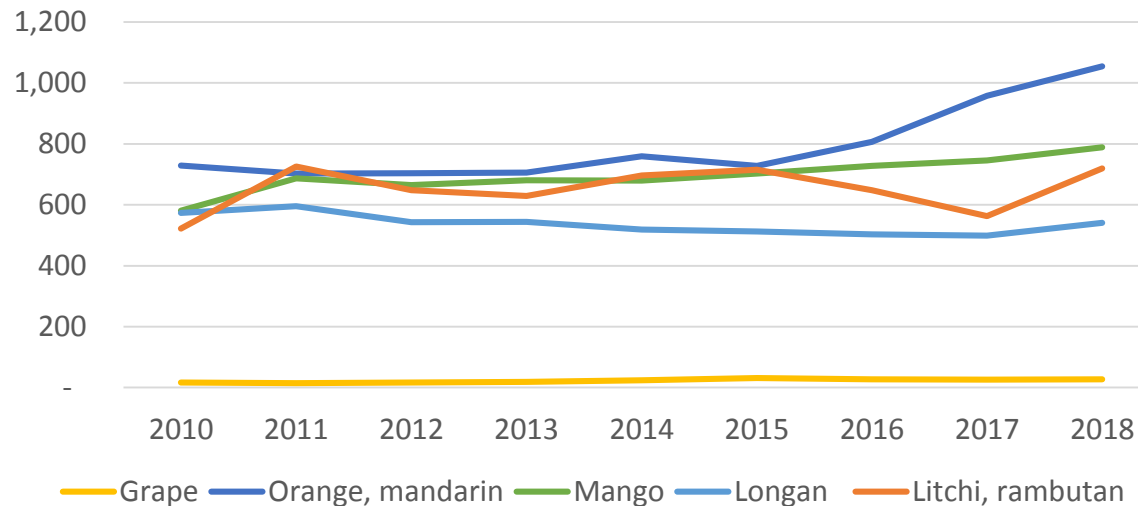
## Meat (000 tons)



## Fishery Output (000 tons)



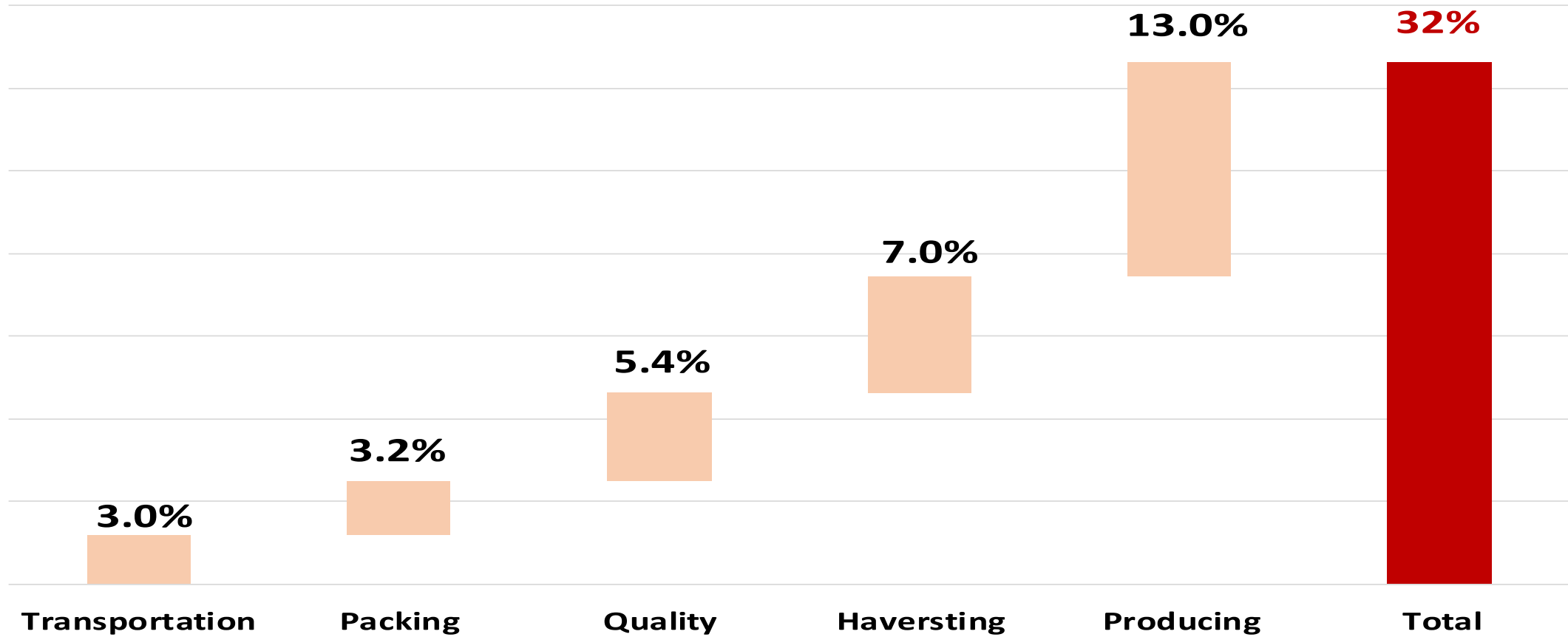
## Fruits (000 tons)



Food loss in Vietnam?

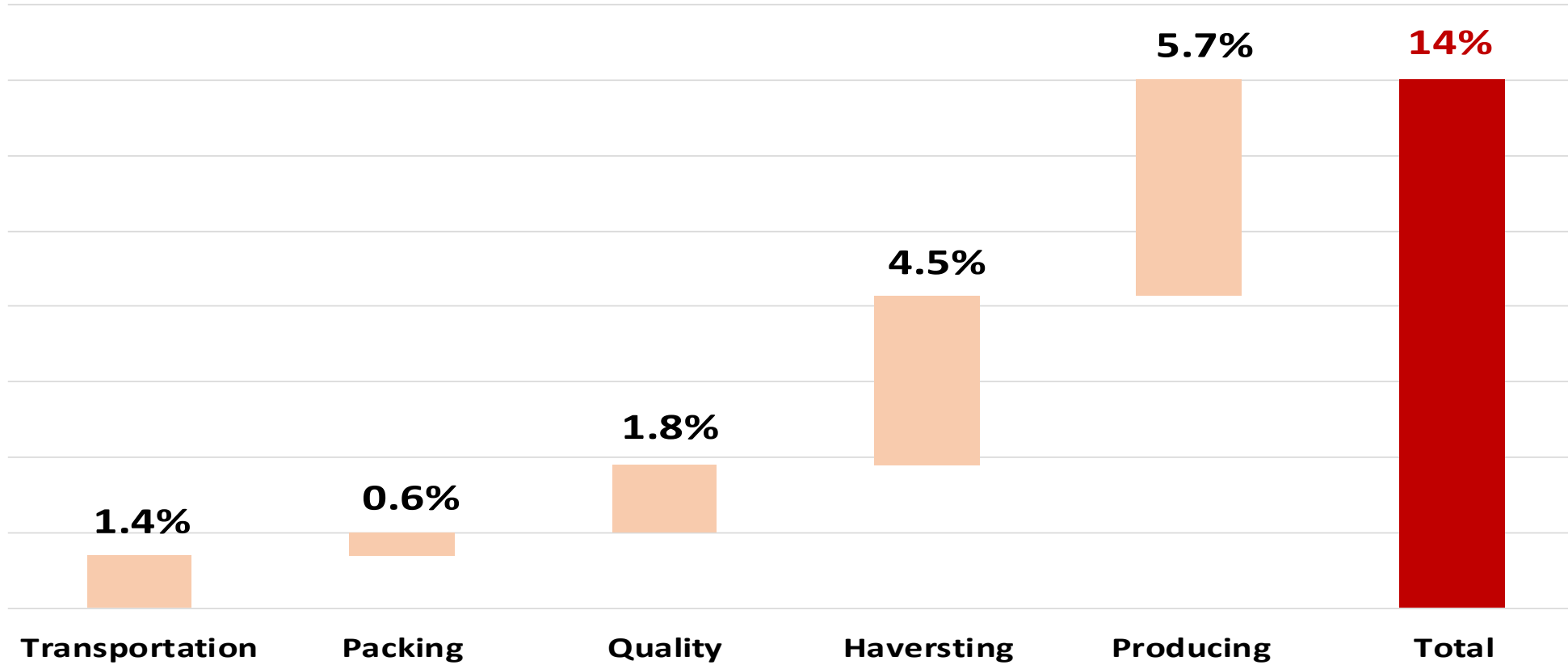


# % of F&V loss in Vietnam: very high



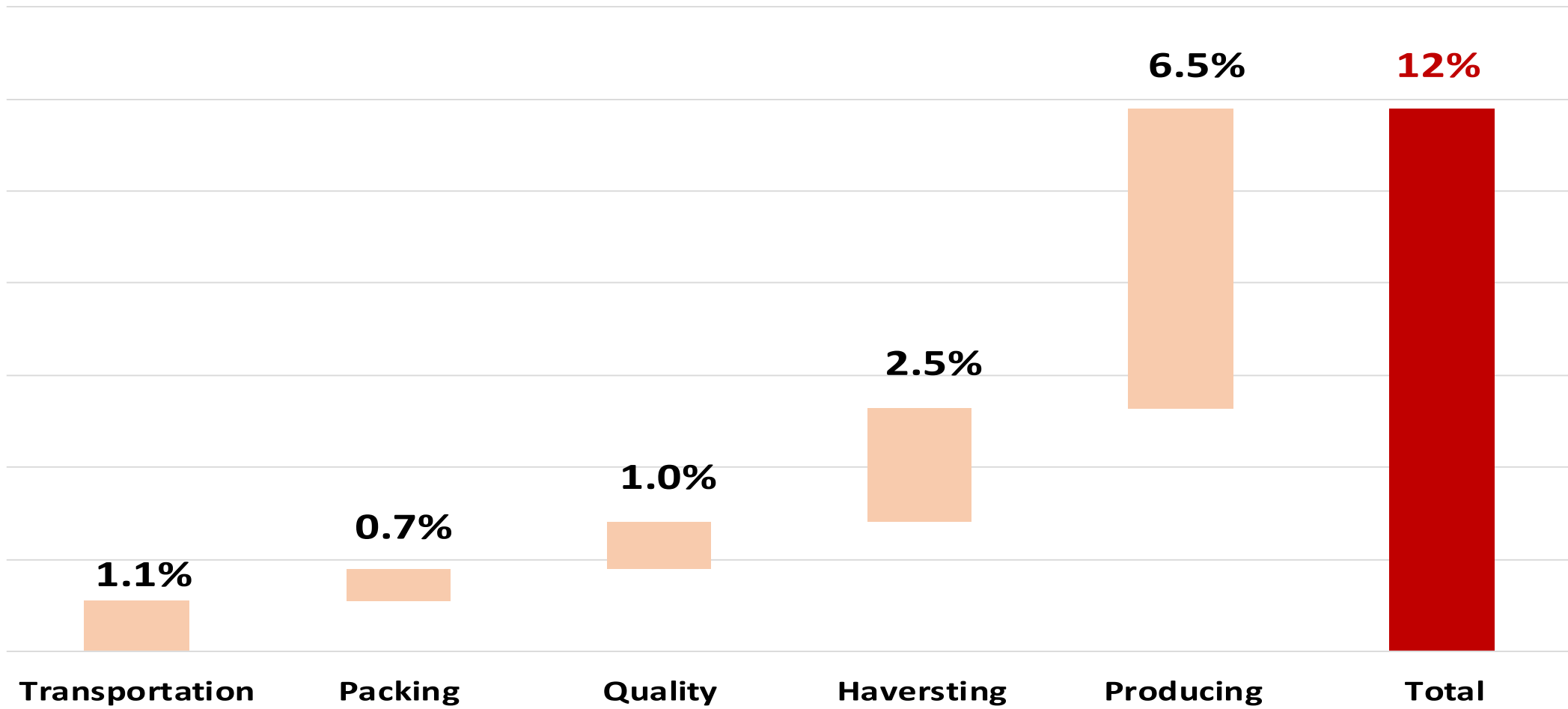
Source: CEL Consulting, 2018

# % of meat loss in Vietnam



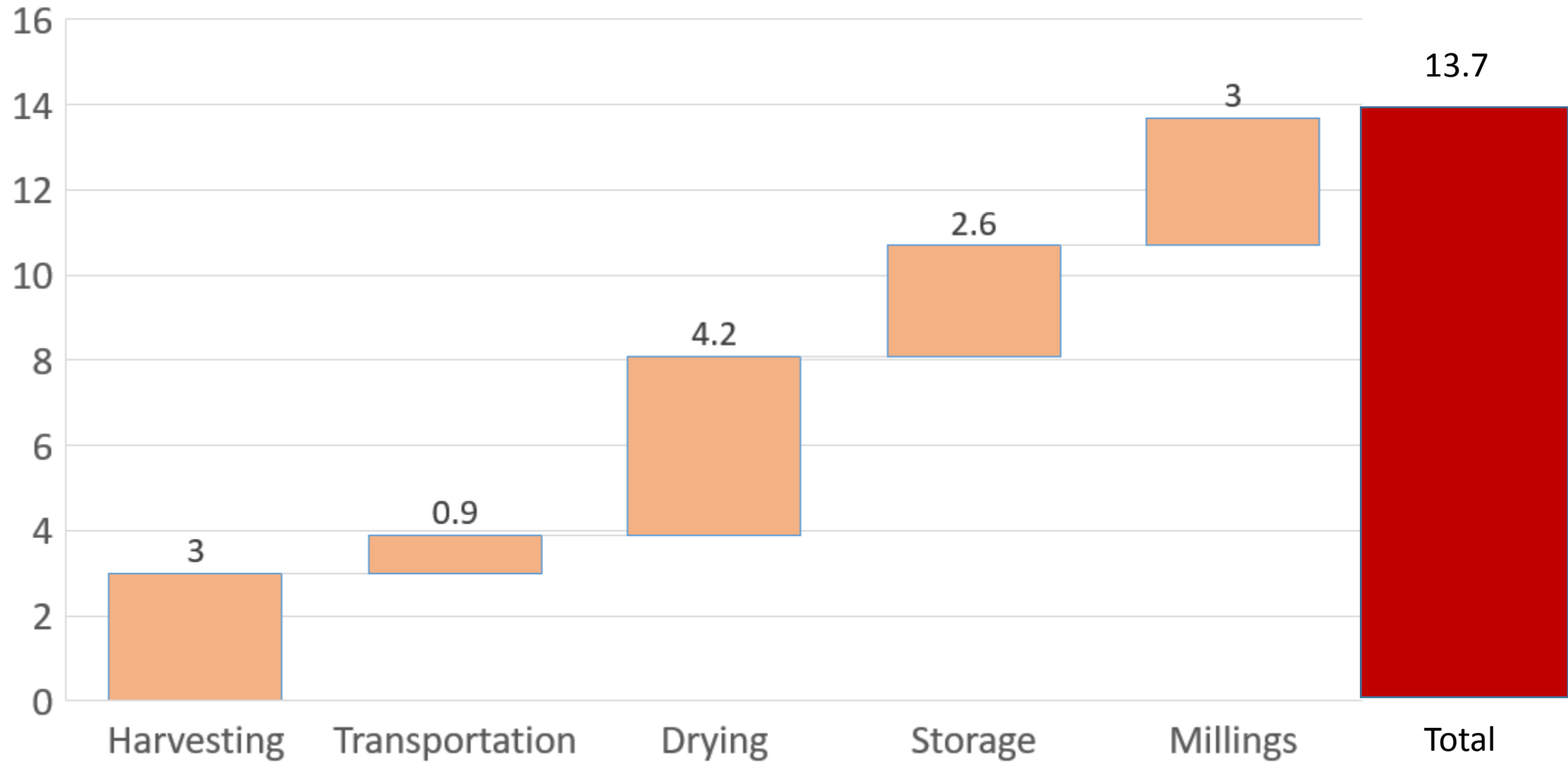
Source: CEL Consulting, 2018

# % of fish loss in Vietnam



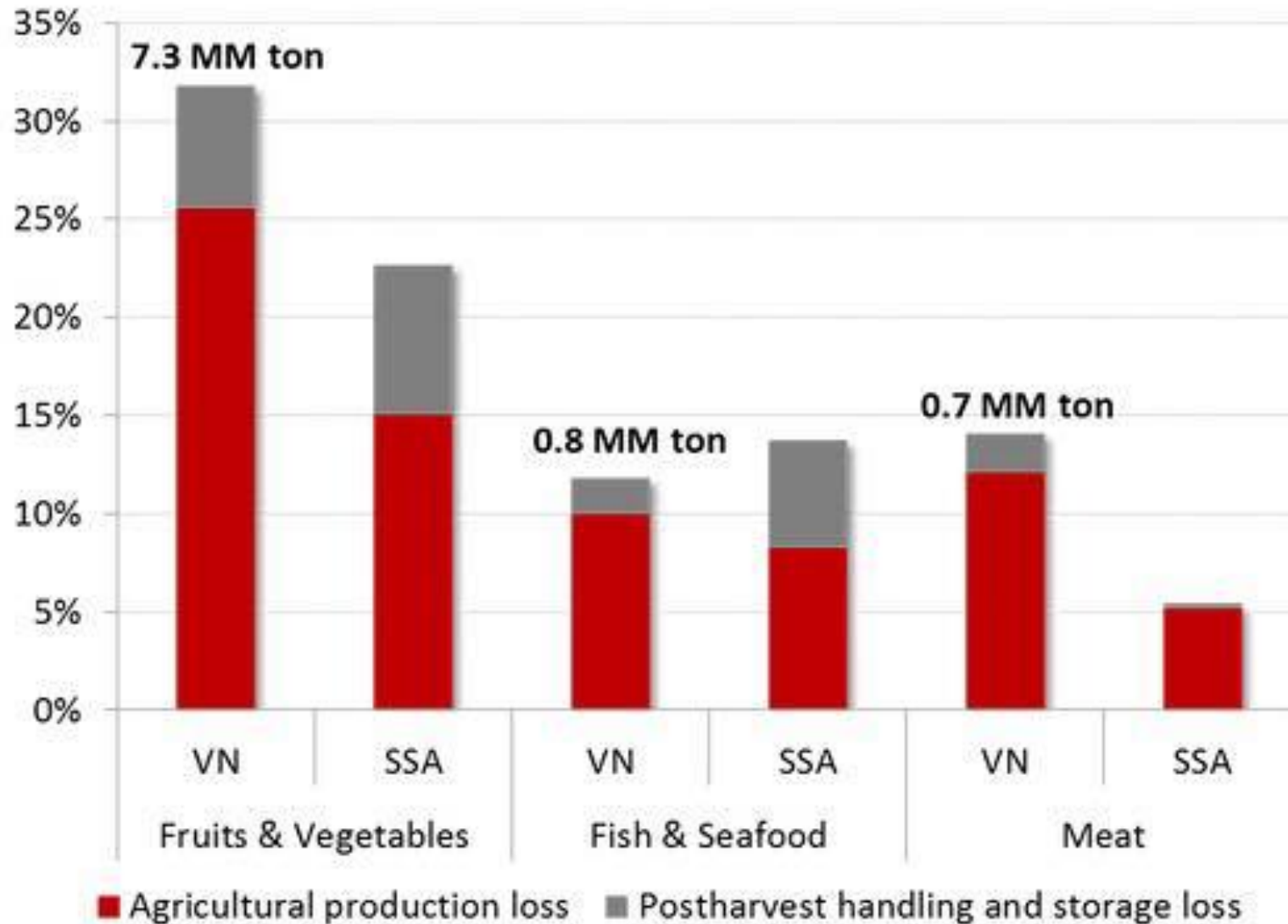
Source: CEL Consulting, 2018

## Rice loss (%)



Source: PHTI, 2013

# Food loss: Vietnam vs. South Southeast Asian economies



## SSA:

Meat 5,3%

Fish and seafood: 14% (pack, handle, transport loss is higher (6% vs 2%))

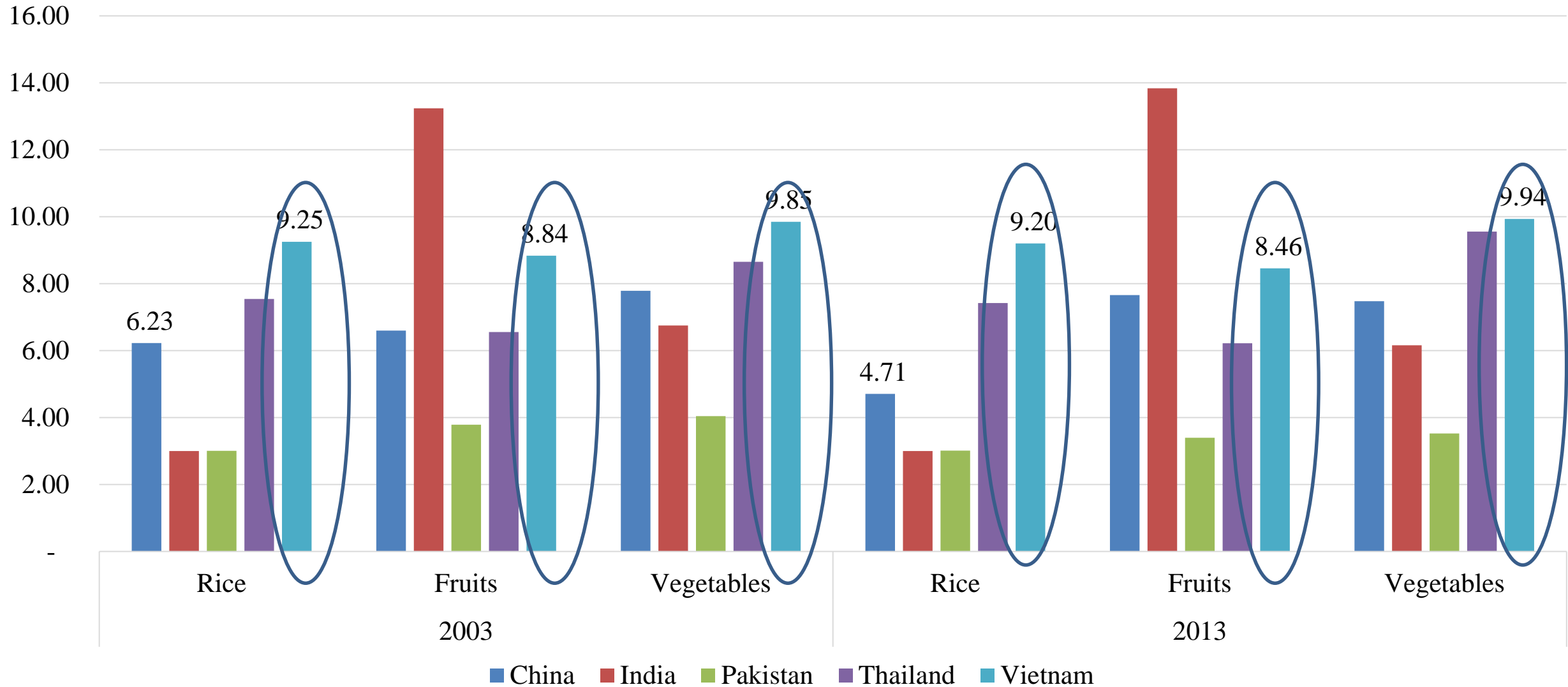
FV: 23%

# Comparison post-harvest loss in rice between Vietnam and other economies

Stage	Vietnam (MRD)	Thailand	India	Myanmar	Cambodia	Asean countries
Harvesting	3	1 - 3	-	1,2 – 2	-	1-3
Transportation	0,9	0,4	-	2,2 – 2,8	-	1-7
Cleaning	-	-	-	1,2 - 2	-	2-6
Drying	4,2	1,2 – 2,2	-	2,5 - 4	-	2-5
Storage	2,6	1,2	-	1,8 – 3,3	-	2-6
Millings	3	2,3	-	2 - 4	-	2-10
Total	13,7	6,1 – 9,1	6	10 – 18,1	13	10-37

**Annual post-harvest loss of rice in MRD: ~ USD 150 - 300 million**

# Food loss and waste in Vietnam and other economies (%)



Source: FAOSTAT (2015)

# Post harvest loss in other crops

- Coffee: 14-15%;
- Rubber: 5-7%;
- Pepper: 9-10%;
- Maize: 14-15%;

- Cassava: 20-25%
- S.Potato: 18-22%
- Soyabean: 6-14%
- Peanut 10-16%

**Source: Estimated by author**



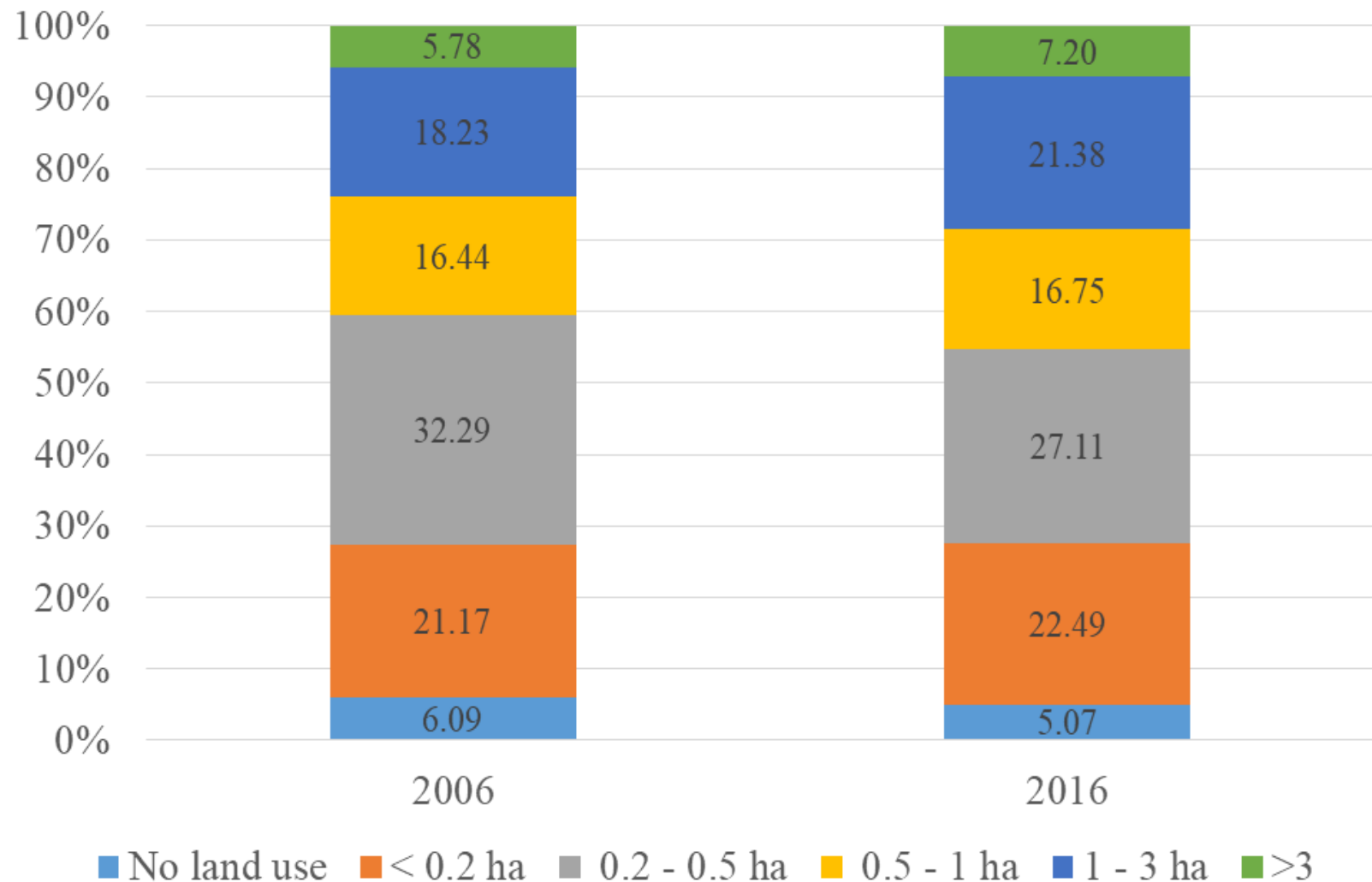
### 3. Main causes of food loss in Vietnam

- Small and fragmented farm
- Low level of mechanization in some stages
- Inadequate farmer knowledge and skills in post harvest loss reduction
- Poor storage at farm level
- Inefficient value chain with many middlemen
- Underdeveloped storage, preservation and logistics
- Usage of by-product: not efficient

# Small and fragmented farms

- Farm structures are dominated by smallholders, <0.5ha/HH
- Low land productivity (1000 USD/ha~= Lao, =1/2 Philippine, =1/3 Thailand and Indonesia)

HHs land structure 2006 and 2016



Source: Vietnam Agroencensus

# Harvesting technologies



Hand/Manual



Reaper















Small combine harvester



Large and modern combine harvester



China				
Thailand				
Vietnam				

## Harvested by machines

- Share of total area using harvesters: RRD 30%, MRD 76%, lower for others.
- Using harvester reduce loss by approximately 3-4%



# Inadequate Drying and modern warehouse



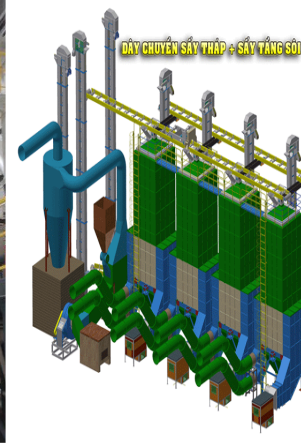
Sun



Fixed Bed  
Batch Dryer



Re-circulating  
Batch Dryer



Continuous  
Flow Dryer



Open bag



Inside Storage



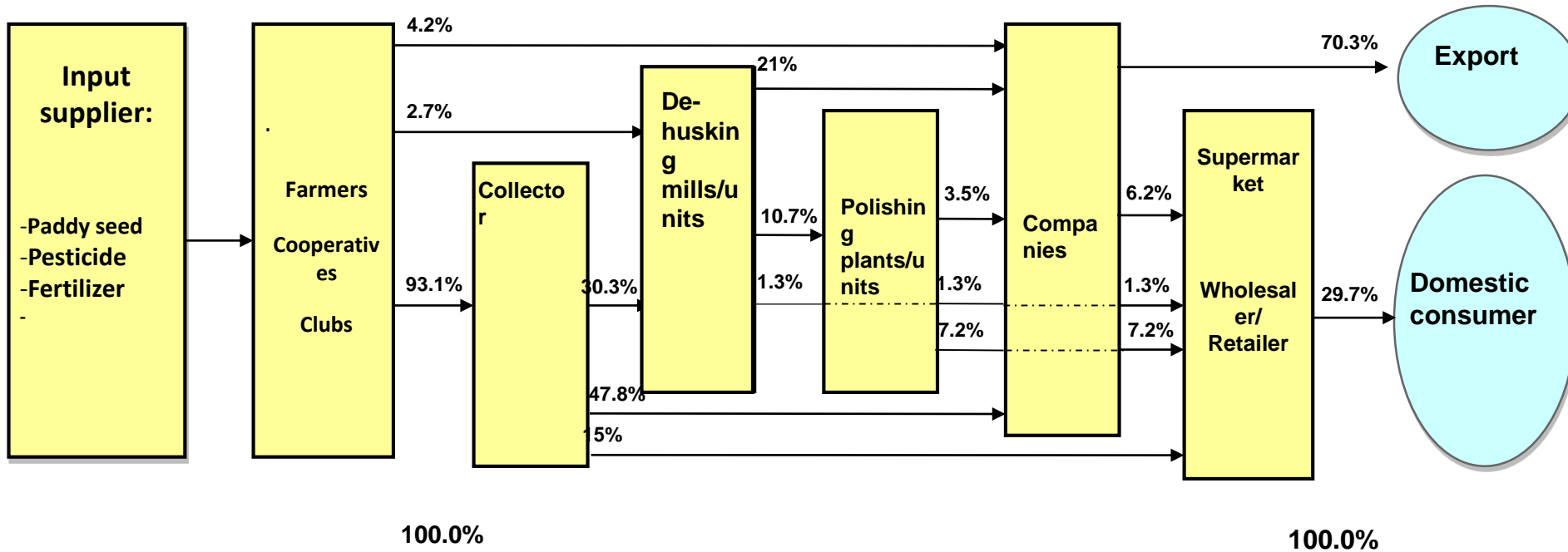
Silo

## Drying and storage

- ❑ Drying by machine: RRD 5%, MRD: 46% (Fixed Bed Bath Dryer 90%, Re-circulating Batch Dryer 10%)
- ❑ Storage: 24% good storage.

*Source: MARD (2016) & CASRAD, 2014 & Research Institute for Biotechnology and Environment, 2016*

# Rice Supply Chain in Mekong Delta



Research institutes  
Universities  
Extension staffs  
Companies

- VFA  
- VinaF2  
-MARD  
-MOIT  
-Custom Office

Local authorities, Banks

# Logistic for rice business

- Score from 1 to 5

Rank	Country	LPI	Customs	Infrast ucture	Sea road	logistic	Traceability	Time to port
29	Malaysia	3.44	3.11	3.5	3.5	3.34	3.32	3.86
35	Thailand	3.29	3.02	3.16	3.27	3.16	3.41	3.73
44	Philippines	3.14	2.67	2.57	3.4	2.95	3.29	3.83
<b>53</b>	<b>Vietnam</b>	<b>2.96</b>	<b>2.68</b>	<b>2.56</b>	<b>3.04</b>	<b>2.89</b>	<b>3.1</b>	<b>3.44</b>
75	Indonesia	2.76	2.43	2.54	2.82	2.47	2.77	3.46

Source: World Bank LPI Ranking

- % trader using cold chain <20%

# Policies to reduce post harvest loss in Vietnam?

**Policies vs. technical solutions**



# 1. Support to high technology investment in production (by subsidized credit, land, import tax)



Source: Vinh Phuc Vin farm



## 2. Support farmers to buy machines: subsidize 50% interest rate loans (Decision 63/2013 by PM)





# 3. Developing “Small farms, large field” models, land consolidation (arranging fields for farmers)

- Trainings
- Financial supports
- Input supports



## 4. Stimulate links in Value chain: especially contract farming between farmers and enterprises

- Decree 98/2018/CP-NĐ:
  - Supporting consultation fee for developing linkages (<15K USD/model)
  - Supporting infrastructures for developing value chain links (warehouse, storage, equipment): < 400000 USD
  - Training support for farmers, cooperatives who join the links
  - Agricultural extension supports
- Value chain financing and high tech financing Decision 1050/QĐ-NHNN

# 5. Developing cooperatives

- Issuing Cooperative Law (2012)
- Development of 15000 cooperatives program (via Decision 461/QĐ-TTg 2018 by Prime Minister)
  - Training support
  - Financial support
- Number of cooperatives in VN is still limited → need more stronger policies
- Coming time: Cooperative Law will be revised

Many thanks

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