Workshop: Reducing Post-harvest Losses in Selected APEC Economies
The Point Hotel, Brisbane, Australia
Monday 24 – Friday 28 November 2014

REDUCING
POST HARVEST LOSSES
IN THE PHILIPPINES

ALEJANDRO TEVES “ALEX” ESCAÑO
FOUNDING CHAIRMAN:
PHILIPPINE CHAMBER OF AGRICULTURE AND FOOD INC. (PCAFI)
VICE CHAIRMAN FOR EXTERNAL AFFAIRS: MFI FOUNDATION INC (MFI)

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Philippine Government Policy

- Assist farmers and fishers in bringing produce to market through
  - Farm to market roads
  - Fish landing and fishing ports

- Assist in primary postharvest through
  - Provision of drying areas (rice and seaweeds)
  - Warehousing
  - Cold storage for fish and seafood
**Governance Framework**

- Farm to Market Roads (FMR) identified by LGU or legislator, validated by Dept of Agriculture under its FMR Dev’t Program and constructed by Dept of Public Works & Highways
- Fish landing areas for municipal fisheries identified by LGUs or legislator and developed with assistance from Bureau of Fisheries and Aquatic Resources (BFAR)

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**Governance Framework**

- Fish Ports for Commercial Fishing boats and Ice Plants Cold Storage areas identified by BFAR and developed and operated by Phil. Fisheries Devt. Authority
- Post harvest technology developed by Philippine Center for Postharvest Development and Mechanization (PhilMech)
**Governance Framework**

- Open rice drying areas identified and developed by LGU at municipal or barangay level.
- Large scale mechanized drying facilities, milling and warehousing is left to the National Food Authority (NFA) and the private sector (under the regulation and licensing by the NFA)
- LGU regulates the passage of food carriers within their respective area and may restrict passage of large trucks during peak hours

**POST PRODUCTION LOSSES**

*Farm to Market Road: Maguindanao*

www.manilastandardtoday.com
POST PRODUCTION LOSSES
Farm to Market Road: Basey, Samar

www.samarnews.com

POST PRODUCTION LOSSES
Road in Tarlac: Used for Rice Drying

agalog1.com/Lesson_View.asp?Lesson_ID=41
Photo: Segundo E. Romero Jr.
POST PRODUCTION LOSSES
Road Used for Drying Rice in Albay Province

POST PRODUCTION LOSSES
Farm Products Transport: Central Luzon

http://mambulaoansworldwidebuzz.blogspot.com/

Philippine Star
POST PRODUCTION LOSSES
Transporting Vegetables

Postharvest Losses in Rice

<table>
<thead>
<tr>
<th>Operation</th>
<th>Average Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvesting</td>
<td>2.03%</td>
</tr>
<tr>
<td>Piling</td>
<td>0.08%</td>
</tr>
<tr>
<td>Threshing</td>
<td>2.18%</td>
</tr>
<tr>
<td>Drying</td>
<td>5.86%</td>
</tr>
<tr>
<td>Milling</td>
<td>5.52%</td>
</tr>
<tr>
<td>Storage</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16.47%</strong></td>
</tr>
</tbody>
</table>

PhilMech, 2014
Problems in Rice

- Lack of investment in Rice Drying facilities whether by government or by industry
- Some Integrated Rice Drying and Milling not financially sustained due to lack of users
- Not all farmers receptive to having their harvest dried for a fee and prefer to use the roads for free
- Chicken or Egg situation

Post Harvest Losses in Corn

<table>
<thead>
<tr>
<th>Province</th>
<th>From Drying</th>
<th>Total Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isabella</td>
<td>4.01%</td>
<td>7.15%</td>
</tr>
<tr>
<td>Bukidnon</td>
<td>4.99%</td>
<td>7.35%</td>
</tr>
<tr>
<td>So. Cotabato</td>
<td>4.63%</td>
<td>5.98%</td>
</tr>
<tr>
<td>PHL Average</td>
<td>4.54%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>
POST PRODUCTION LOSSES
The Present Situation

- Up to 16.47% in Rice, 7.8% in corn and 11.6% in onions are lost after harvest (PhilMech, 2014).
- An estimated 25-30% of total fish production in the Philippines is lost from the distribution chain due to improper post harvest handling practices (Yap, E. 2006).

Problems in Vegetables

- Lack of proper storage cause wide fluctuation in prices of basic vegetable due to fluctuation in supply within the year due to seasonality or weather situation.
- Lack of proper packaging at the farm level result in high percentage discards after transport.
### Post Harvest Losses in Onions

<table>
<thead>
<tr>
<th>Operation</th>
<th>Average Losses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvesting:</td>
<td>5.73</td>
</tr>
<tr>
<td>Hauling:</td>
<td>4.43</td>
</tr>
<tr>
<td>Cleaning</td>
<td>0.76</td>
</tr>
<tr>
<td>Bundling/bagging</td>
<td>0.42</td>
</tr>
<tr>
<td>Drying</td>
<td>0.25</td>
</tr>
<tr>
<td>Storing:</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.59</strong></td>
</tr>
</tbody>
</table>

### POST PRODUCTION LOSSES

**Inland Fishing Port**

- Small fishers in San Miguel Bay, Camarines Sur have to travel 13 km upstream through a river to reach the fishing port and cold storage.

http://pfda.da.gov.ph/
Importance of Reducing Post-harvest losses

- The Philippine Rice Situation
  - 2013 Production: 18.439 MMT Paddy Rice
  - 2013 Rice Import: 398,000 MT
  - If Postharvest Losses can be reduced by 50% to 8.23% = 3.04 MMT Paddy saved = 1,062,328 MT White Rice @ 70% Milling Yield

Conclusion

- With the weather becoming more extreme due to climate change the reduction of waste in agriculture and fisheries production becomes even more acute.
- The world should aim for maximizing the utilization of harvests whether from land or sea.
- This can be done only with proper post harvest facilities and efficient transport systems
STRATEGIC ROLES OF AGRICULTURE AND FISHERY

- **ECONOMIC** - 11% of GDP, grew by 2.46%
- **LIVELIHOOD/SELF EMPLOYED** - Over 12.27 million direct jobs or 33% of employment, A slight growth from 12 million last year
- **ENVIRONMENT** - impact of water use, irrigation, deforestation, watershed, coral reefs, and climate change.

Agriculture as PRIORITY

- Agriculture provides food for people.
- Increases in agricultural output can lead to cheaper food, benefiting both the urban and rural poor, who spend more than 41% of their income on food in the Philippines.
## Importance of Agriculture

<table>
<thead>
<tr>
<th>FAMILY Expenditure Group</th>
<th>2003</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food</strong></td>
<td>43.1</td>
<td>41.4</td>
</tr>
<tr>
<td>Rent/Rental Value of Dwelling Unit</td>
<td>13.1</td>
<td>12.7</td>
</tr>
<tr>
<td>Fuel, Light and Water</td>
<td>6.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Education</td>
<td>4.0</td>
<td>4.4</td>
</tr>
<tr>
<td>Personal Care and Effects</td>
<td>3.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Clothing, Footwear &amp; Other Wear</td>
<td>2.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Medical Care</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Durable Furniture and Equipment</td>
<td>2.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Household Operations</td>
<td>2.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Alcoholic Beverages</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Recreation</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Non-Durable Furnishings</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>House Maintenance and Minor Repairs</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Taxes Paid</td>
<td>2.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Miscellaneous Expenditures</td>
<td>2.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Other Expenditures</td>
<td>2.9</td>
<td>3.0</td>
</tr>
</tbody>
</table>

## Agribusiness Supply Chain Players

- **Seed supplier breeder**
- **Fertilizer distributor**
- **Crop protection provider**
- **Animal health provider**
- **Input suppliers**
- **Growers/Producers**
- **Processors**
- **Distributors**
- **Retailers**
- **Consumers**
- **Supermarket**
- **Restaurant**
- **Convenience store**
- **Cannery**
- **Dressing plant**
- **Mill**
- **Slaughter house**
- **Packing house**
- **Wholesaler**
- **Importer**
- **Logistics provider**
- **Farmer**
- **Grower**
- **Animal Raiser**
- **Packaging products provider**
- **Farm machinery supplier**
- **Irrigation equipment provider**
Agribusiness Supply Chain Players

- The importance of agriculture & fisheries to the Philippine economy is greater than the standard Gross Domestic Product (GDP) estimates because these capture only the production phase of value chains.
- This understates the importance of agriculture and fisheries to the Philippine economy. If the share of manufacturing (e.g., food and beverage industries) and service sector activity that is directly dependent on the existence of domestic agriculture and fisheries production is taken into account, then a different picture emerges.

BENCHMARKING WITH CHINA

H.E. Ma Keqing
Ambassador of PROC in RP with
Alejandro “Alex” T. Escaño

[Photo of H.E. Ma Keqing and Alejandro “Alex” T. Escaño]
China’s Achievement in Agriculture
Farmers’ income increased
By H.E. Ma Keqing
Ambassador of PROC in RP

In 2011, farmers’ annual nominal income reached 6,977 Yuan/person, with 10.8% annual rate of increase during 2000-2011.

Comparison of PROC & RP in Agricultural Sector
Population & Farmland
Population:
By H.E. Ma Keqing
Ambassador of PROC in RP

POPULATION:
- PROC: 1347.00 million (end of 2011)
  RP: 92.34 million (2010, NSCB)

FARM LAND:
- PROC: 133.0 million hectare (YEAR 2011)
  RP: 14.2 million hectare

FARM LAND PER CAPITA:
- PROC: 0.10 ha
  RP: 0.15 ha
Comparison of PROC & RP in Agricultural Sector
Grain Productivity- Unit Yield, Kg/ha
By H.E. Ma Keqing
Ambassador of PROC in RP

<table>
<thead>
<tr>
<th></th>
<th>PROC:</th>
<th></th>
<th>World:</th>
<th></th>
<th>RP:</th>
</tr>
</thead>
</table>

BENCHMARKING WITH TAIWAN
Asian Vegetable Research and Development Center
(AVRDC) in TAIWAN

Research to promote development

- Founded in 1971 as the **Asian Vegetable Research and Development Center** with a regional research focus on Asia
- Our research and development is **nonprofit**
- Our research outputs are **global public goods**
- **The World Vegetable Center** has an expanding global role with a growing network of regional offices

Alleviate poverty and malnutrition in the developing world through the increased production and consumption of health-promoting vegetables.
WORLD VEGETABLE CENTER IN TAIWAN

MAUREEEN MERCOZZI
– AVRDC Head Communication & Information

WORLD VEGETABLE CENTER GENBANK IN TAIWAN

DR. ANDREAS EBER
– AVRDC GENBANK Manager
HAN KUANG VEGETABLE
PRODUCTION COOPERATIVE IN
TAIWAN

PCAIFI visit MARDI

• PCAARRD, represented by Dr. Patricio Faylon, with the president of the Philippine Chamber of Agriculture and Food, Inc. (PCAIFI), Mr. Phillip Ong, and PCAFI chairman and TEVSAPHIL Chairman & President Alejandro "Alex" T. Escaño, visited the Malaysian Agricultural Research and Development Institute (MARDI) last June 7, 2013 at Serdang Selangor, Malaysia to benchmark its integrated agricultural production.
• The group also included Ms. Drusila Esther Bayate, Asst. Director for Technical Science of the Bureau of Fisheries and Aquatic Resources (BFAR).
• The Philippine delegation at the MARDI Biotechnology Research Center
PCAFII
Benchmarking with TRAPIA in Malaysia

- PCAARRD, represented by Dr. Patricio Faylon, with the president of the Philippine Chamber of Agriculture and Food, Inc. (PCAFII), Mr. Phillip Ong, and Col. Alejandro T. Escaño, Chairman of PCAFII & TEVSAPHIL, visited TRAPIA Malaysia Sdn Bhd in Malaysia last June 3-7, 2013.
- The group also included Ms. Drusila Esther Bayate, Asst. Director for Technical Science of the Bureau of Fisheries and Aquatic Resources (BFAR).
- TRAPIA Malaysia Sdn Bhd is a joint venture corporation duly organized under the Malaysian law. GenoMar AS of Norway owns 85% of the shares through its 100% owned daughter company, GenoMar Production AS. The Malaysian partner company, Dalefin Holding Sdn Bhd./SADC, holds the remaining 15% of the joint venture company.

BENCHMARKING AGRI GROWTH
Philippines trailed in the 80s and 90s, and picked up in 2000s; Private Sector-led

PER CENT (%) Average Annual Growth

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>3.6</td>
<td>2.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3.4</td>
<td>0.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>1.0</td>
<td>1.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Thailand</td>
<td>3.9</td>
<td>4.2</td>
<td>3.0</td>
</tr>
<tr>
<td>China</td>
<td>5.9</td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2.8</td>
<td>4.3</td>
<td>3.9</td>
</tr>
</tbody>
</table>

THE IMPORTANCE OF FARMERS

YOU MAY NEED A DOCTOR MAYBE ONCE A YEAR
YOU MAY NEED A LAWYER MAYBE ONCE A YEAR
YOU MAY NEED AN ACCOUNTANT MAYBE ONCE A YEAR
ANY OTHER PROFESSIONAL MAYBE ONCE A YEAR

BUT YOU AND I, ALL OF US NEED THE FARMERS EVERYDAY !!!

WE ALL NEED FOOD TO EAT EVERYDAY AND WITHOUT THE FARMERS WE WILL HAVE NO FOOD AND WE WILL ALL STARVE TO DEATH

WE SHOULD BE THANKFULL THAT THERE ARE FARMERS
WE SHOULD HAVE MORE REPECT TO ALL THE FARMERS

IT IS TIME
TO CUT DOWN POST PRODUCTION LOSSES !!!

THANK YOU

MABUHAY TAYONG LAHAT !!!