Cold Chain Infrastructure - Suggestions from Japan As Solution Provider

Purpose: Information
Submitted by: Japan
Cold Chain Infrastructure
-Suggestions from Japan as Solution Provider-

APEC Policy Partnership on Food Security (PPFS)
Medan, Indonesia, June 22, 2013

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Nichirei Foods Inc.

Corporate Profile “Nichirei Corporation”

Nichirei Corporation -Holding Company-
Group Statement: Networking “Good Taste” and “Freshness”

- Established: December 1, 1945
- Head Office: Tsukiji, Chuo-ku, Tokyo
- Paid in Capital: $303 million (@JPY 100/$)
- Net Sales: $4.7 billion (FY2012 ended March 2013)
- Number of Employees (consolidated): 12,082

Net sales by Segment FY2012: Million $
Preface

1. Cold Chain Infrastructure - Key part of food supply chain
   Well recognized in the past presentation, as below:
   - September 2012: Presentation at PPFS Work Shop in Tokyo, Japan
   - January 2013: Presentation at PPFS in Jakarta, Indonesia
     "A Cold Chain Proposal for Food Loss - Learning from the Past and Present of Japan -"
   - May 2013: ABAC Japan Forum of Mid-Year Activities in Tokyo, Japan
     "Building of Cold Chain Infrastructure through PPP"

2. Cold Chain Infrastructure - Solution for sustainable economic growth
   - Food Producer groups
   - Food Processors, Manufacturers, Retailers, Food Services
   - Communities

3. Establishing the Cold Chain Infrastructure
   - Requires a strong Policy Partnership of Public and Private – Japan case

FAO “Edible insects” released on May 13, 2013

- Estimated 2 billion people are eating
- More than 1900 insect species consumed
- Rich in protein and good fats, and high in calcium, iron and zinc
- 2 kilo grams of feed to produce 1 kilo grams of insect meat vs. 8 kilo grams for beef

Source: FAO “Edible insects”
Current Food Loss / Waste in the World

- **Rapid Growth of World Population**
  - 2011: 7 billion
  - 2050: 9 billion

- **Starving and Malnourished people**
  - World: 900 million people are starving
  - ASEAN: 17% of children suffering malnutrition

- **Food Losses & Waste**
  - About 1.3 billion tons a year in the world
  - 1/3 of total food production in the world
  - Largest for fruits & vegetables (Around 20% at Producing Level)
  - Substantial gaps in knowledge throughout the food chain
  - Loss reduction as an important option to increase food availability

Source: Save Food Congress, Dusseldorf, 16 May 2011

Causes of Food Losses & Waste by Region

- **Per capita food losses and waste, at consumption and pre-consumptions stages**

- **Latest Initiative**
  - 5th June, 2013
  - USDA/EPA launched the U.S. Food Waste Challenge, calling on others across the food chain—including producer groups, processors, manufacturers, retailers, communities, and other government agencies— to join the effort to reduce, recover, and recycle food waste.

- **Awareness of Communities**
  - Poor storage facilities
  - Lack of refrigeration
  - Lack of primary processing facilities
  - Poor transportation
  - Inadequate market system and facilities
  - Poor packaging

Source: FAO "Global Food Losses and Food Waste", 2011
Development of Food Supply Chain in Japan

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>1st super market (Daiei) in Japan</td>
</tr>
<tr>
<td>1957</td>
<td>1st CVS in Japan</td>
</tr>
<tr>
<td>1965</td>
<td>1st McDonald's shop in Japan</td>
</tr>
<tr>
<td>1973</td>
<td>3 deliveries/day</td>
</tr>
<tr>
<td>1974</td>
<td>Total sales 12 trillion JPY</td>
</tr>
<tr>
<td>1985</td>
<td>Total sales 9 trillion JPY</td>
</tr>
<tr>
<td>2011</td>
<td>Total sales 3286 shops</td>
</tr>
</tbody>
</table>

Japan Government’s Initiative in 1965

“Admonishment of Cold Chain Infrastructure”:
Recommendation to modernize the comprehensive food supply chain system to contribute to the systematic development of diet style

1. Construction of cold chain
2. National food grades/standard and inspection system
3. Information system on food distribution
4. Processing & transfer center system
5. R & D of food distribution

Source: Science and Technology Agency, Resources Research Council, 1965
PPP scheme in building Cold Chain Infrastructure in Japan

- Government
  - Public Wholesale Market
  - Import liberalization of agricultural products
  - Admonishment of Cold Chain (1965)
  - Construction of highway system & cold storages
  - Liberalization of foreign capital investment
  - Legislation of stricter food safety standards

-Private Sectors
  - Balancing of supply and demand system
  - Development of cold temperature logistics
  - Development of frozen processed foods industry
  - Foreign capital inflow
  - Chain operation of food service and food retail
  - Technical advances in food industry

Development of Cold Chain Infrastructure in Japan

- More than doubled in 30 years (1972 – 2000)
- Change of location: From “near the port sites” to “closer to consumers”

Source: Japan Association of Refrigerated Warehouses
Development of Frozen Processed Food in Japan

Trends in domestic frozen food consumption and penetration of home appliances

- Penetration of Household Refrigerator
- Penetration of Household Microwave

1965 “Admonishment of Cold Chain”

Agricultural products import:
- 1960: 1.7 billion USD
- 2010: 53.6 billion USD

Domestic Production - Frozen Processed Foods

Imported Frozen Processed Foods

Imported Frozen Vegetable

Source: Japan Frozen Food Association

Benefits from Cold Chain Infrastructure

Historical Development:
Creating added value of food industry / Enhancement of cold chain infrastructure

- Growth of food industry
- Broader choice of foods and meal occasion
- Sustainable increase in employment / income
- Development of food manufacturing industry
- Enhancement of food safety / nutrition standard
- Increase in farm productivity / income
- Stable balancing of food supply / demand
- Reducing food losses

- Cold storage at port site / closer to farm producers
- Individual logistic by farm producers
- Cold storage closer to consumer
- Flexible nationwide logistic network
- Comprehensive Food Supply Chain
- Modernizing of retail / food service

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Acerola Business in Brazil - One of the Best Practice

**NICHIREI, BRAZIL (SINCE 1978)**
- Processing facilities
- Training of local farmers
- Frozen processing technology
- Breeding / R&D of Vitamin-C acelora species

**ACEROLA FRUITS IN BRAZIL**
- Rich Natural Vitamin C
- (Contain 34 times of a lemon)
- Perishable & Delicate

**WORLDWIDE MARKET (SINCE 1985)**
- Japan, EU, Asia
- Health Conscious
- Demand for Natural Vitamin C

**18,000km**

**Creation of New Business**
- Cultivation & Frozen Processing in Brazil
- Worldwide sales of Processed Acerola Fruits

**Cold Chain Infrastructure**

**PRINCIPLE: PUBLIC PRIVATE PARTNERSHIP**

- Minimizing post-harvest losses is “Critical” for emerging economies
- Sharing developed economies’ technology innovated in the past to save food losses in emerging economies
- Proposed Solution: Public Private Partnership

**Public Sector**
- Infrastructure
  - Roads
  - Markets
  - Energy (e.g. electricity)
- Public Awareness
  - (e.g. Education)

**Private Sector**
- Facilities
  - Cold Temperature Logistic
  - Frozen Processed Plant
  - Freezer at Retail Stores
- Management of Operation
1. Ongoing Public Infrastructure Projects:
   - Extendable to include the development of food manufacturing industry
     - Jakarta’s Metropolitan Priority Area (MPA)
     - Greater Mekong Sub-region’s Economic Corridors
       - East-West Economic Corridor (EWEC)
       - Southern Economic Corridor (SEC)
       - North-South economic Corridor (Kunming-Bangkok Expressway)

2. Private Sector – Nichirei Group:
   - JV with Thai’s Siam Cement Group
     in building a network of cold storage facilities
     - Sep. 2013 – Cold temperature logistic business in Thailand and export of chicken products & fruits juice
     - Future plan – Business expansion to Vietnam and Malaysia
   - JV with local food partners
     - Chicken processing business in Thailand - export of processed chicken products
     - Processed food business in Viet Nam

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Building a PPP Platform for Cold Chain Infrastructure

**Comprehensive Food Supply Chain**

**Cold Chain Infrastructure + Food Industry**

**Public Sector**
- Governments
- Int'l Organization
- Community

**Private Sector**
- Farm Producer
- Financial Institution
- Food Manufacturer
- Refrigeration Engineer
- Cold Logistic Company
- Consulting Company

**Pilot Project**
- Feasibility Study
- RFP

**Steering Committee**

**Cold Chain Infrastructure Consortium**

**APEC Economies- Approval**

**Infrastructure Projects**
- e.g.) Jakarta Metropolitan Priority Area (MPA)
- Master Plan

**PPFS @ Medan 2013**
**Proposition – Next Steps**

**Steps for building the Cold Chain Infrastructure through PPP:**

   - Cold Chain Infrastructure Consortium

2. Formulation of public policy (2015-2016)
   - Food supply chain system, Farm production, Food manufacturing industry

3. Steering Committee (2017)
   - Feasibility study, Research Team,

   - RFP, Project SPV, Project finance

5. Creation of comprehensive food supply chain
   - Farm production:
     - Regional network of public wholesale market, cold storage & primary processing facilities
   - Cold temperature logistics
   - Food manufacturing industry
   - Food retailing, Food service

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**Combination with Declaration in NIIGATA / KAZAN**

**Cold Chain Infrastructure – Achieving the goals of two Declarations**

**Shared Goals**

**NIIGATA Declaration**

1. Sustainable development of the agricultural sector
2. Facilitation of investment, trade and markets

**KAZAN Declaration**

1. Increasing agricultural production and productivity
2. Facilitating trade and developing food markets
3. Enhancing food safety and quality
4. Improving access to food for socially vulnerable groups of population
5. Sustainable ecosystem management, and anti-illegal fishing

**Cold Chain Infrastructure**

- Increasing farm productivity
- Increasing income for farmers
- Increase of food export
- Developing food industry
- Improving hygiene and nutrition
- Reducing food losses
- Sustainable food supply chain
Thank You Very Much for Your Attention!