Solutions to improve the marketing of tropical fruits in Myanmar

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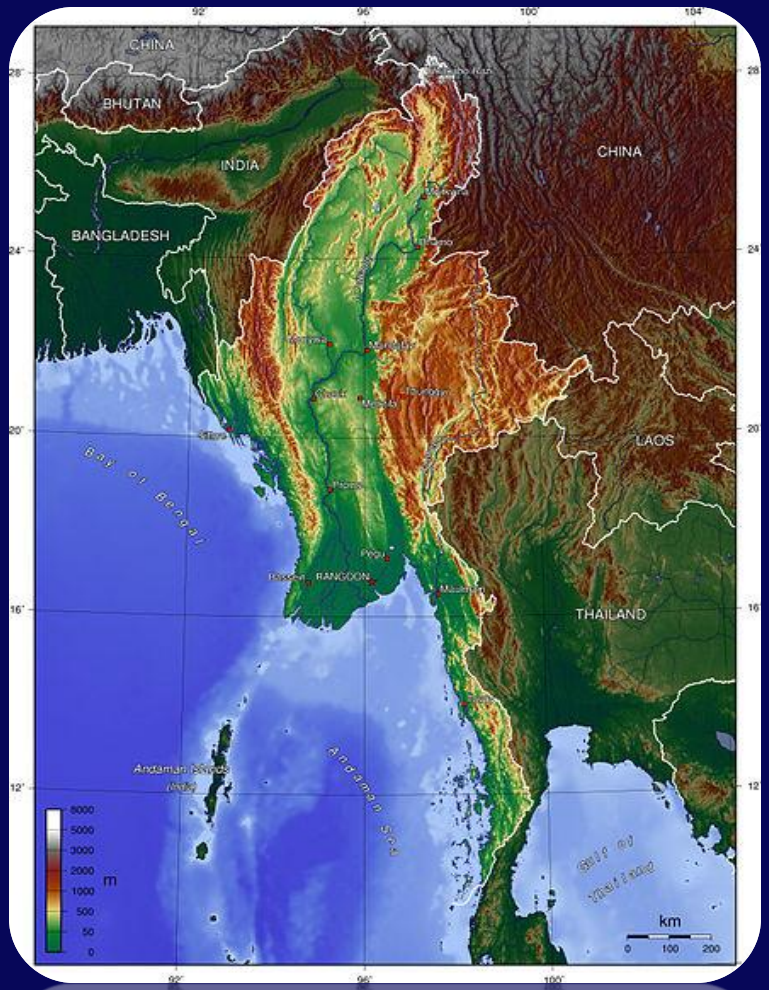
Myanmar has different topography and could cultivate both tropical and temperate fruits and vegetable in different area.



Myanmar and Fruits

Botataung Pagoda (Yangon)

MFFVPEA stands for "Myanmar Fruit, Flower And Vegetable Producer And Exporter Association"

Current Fruits for Export

Our Current Products :

Fresh Fruit

SeinTaLone

Honey Melons

YinKwae

Watermelons

MFFVPEA Solutions

To promote the fruit quality and quantities in pre-harvest management

Post- Harvest Management

Food Safety Standard using Certification as Marketing Tools

Market Linkage and Contract Farming

Fruits Festivals and Farmers Market

TO PROMOTE THE FRUIT QUALITY AND QUANTITIES

To promote the fruit quality and quantities in pre-harvest management

Pre-harvest Factors that Impact Postharvest Fruit Quality and Quantity

Pre-harvest Factors that Impact Postharvest Fruit Quality and Quantity

- Genetic Factors
  - Cultivar selection
  - Rootstock selection
- Environmental Factors
  - Light
  - Temperature
- Cultural Practices
  - Pruning
  - Water quality and irrigation
  - Orchard floor management, fertilization, and mineral nutrition
- Disease Treatment
- Pyto-hormones and other Growth Regulators

Genetic Factors

Cultivar Selection

The cultivar selection plays an important role in quality and quantity of mango production.

It is key to select cultivars that have desirable traits (size, texture, color, flavor , etc..) depending on the market.

Cultural Practices
Orchard Floor Management

Orchard's soils physical and chemical properties need to be maintained in good condition to ensure root growth occurs without issue

Weeds must be controlled, people and perhaps Machinery need to be able to access the orchard

Types of Orchard Floor Management

- Cultivation between the rows
- Cover crops
- Mulching
- Keep the soil bare

Cover Crops

- Works well if there is good moisture in the soil year round
- Maintains soil structure, increases water penetration, prevents erosion, and keeps soil temperature low
- Legumes can be used which have the added benefit that they fix nitrogen
- Does require added labor to control the cover crops

Mulching

Can use straw, hay, dried grass, wood shaving and chips or any cheap organic matter that is available in large amounts

In some cases plastic mulches are used but expensive

Soil Bare

- Better option in arid regions
- No cover means less competition for water and nutrient
- But can lead to erosion, leaching, and soil harding in heavy rain fall areas

Weed Control

- Weeds can lower crop yields if adequate moisture is not available
- Some weeds can cause sanitary problems with the crops
- Weed control is key in establishing young orchards. The first 2 – 3 years are key as the trees have not yet established and do not have developed canopy to shade weeds

Cultural Practice
Fertilization

A number of mineral elements are needed for plant growth and development; they are broke up into two classes.

Macronutrients : Nitrogen, phosphorus, potassium, sulfur, calcium, and magnesium

Micronutrients: Iron, zinic, boron, manganese, copper, molybdenum, and colbalt

Applying Manure

- Often they have a relatively low nutrient content so large amount are needed

- The manure will need time to break down so you will want to apply a few months before the plant needs the nutrients (before new growth)

Plant Hormones and Growth Regulators

Plant hormones and plant growth regulators used on pre harvested fruit can affect fruit development before harvest but also affect fruit quality and shelf live after harvest

Post- Harvest Management

Post Harvesting Time

Post Harvest Handling
Harvesting

- Insure the pickers have proper training
  - **Know proper maturity indices for variety being harvested**
  - Harvest either early or later in the day
  - Gently harvest and handle the fruit
  - Pick fruit from bottom to top of tree
  - Fallen fruit should never be mixed with picked fruits
- Use appropriate containers, bags and tools
  - After harvesting, fruits should be collected in picking bags and gathered in the shade
  - Harvesting containers should be proper size, no sharp edges, and have ventilation

Generalized fruit handling scheme

Harvest by hand

↓

Place into shoulder bag

↓

Pour into field bin

↓

Transport to packing house

↓

Generalized fruit handling scheme

Unload

↓

Culling (sorting)

↓

Disinfestations treatment

↓

Spray with wax and /
or fungicide

↓

Culling (sorting)

↓

Post harvest

Consumers in export markets put a high priority on high yields of **desired size and high quality**

Demands from the consumer

- Size and Shape
- Color
- No Blemishes
- No Disorders
- Texture and Flavor
- Food Safety

Mango Sorting

Mango Sorting & Packing Line:

စိန်တစ်လုံး

Sorting Honey Melon

Sorting & Packing @ Mandalay Division Honey Melon Farm (Year 2012)

Generalized fruit handling scheme

Weight / Color Sorting

↓

Packed into cartons

↓

Cooled

↓

Loaded into shipping containers

↓

Air, land or sea transport to market

Key Postharvest methods to manage quality

- Reduce metabolic rates
- Reduce water loss
- Minimize damage
- Prevent disorder development

Singapore Super Market

Singapore Super Market – On Sales

Singapore
- Mustafa Centre
- Cold Storage
- NTUC
- Sheng Siong

Malaysia
- EcoSave

Myanmar Sein Ta Lone in Singapore

SeinTaLone Mango

Punnet Packing

- 301g ~ 350g x 2 pc
- 250g ~ 300g x 3 pc

Commodity Center_ Muse_ cross boarder with China

Sorting and Packing of Honey Melon

Honey Melon Sorting and Packing Line

At Singapore Market

Singapore Market
Advertisement Poster

@

Cold Storage

Processing at Peak Season

Dried Mango Processing

Mango Leather Making at Community

Evaporative cool storage

Evaporative cool Chamber is … a low-cost, on farm storage structure for the short-term extension of fruit and vegetables shelf life

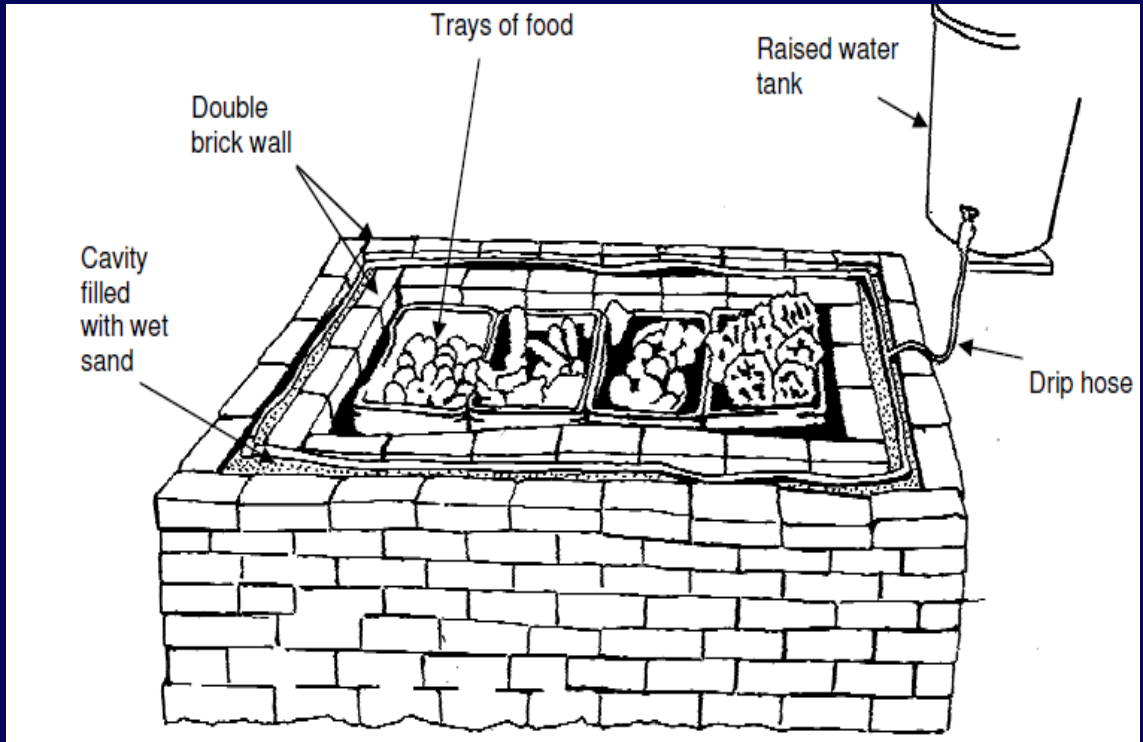


Figure 4: A static cooling system. Illustration: Practical Action / Neil Noble.

Food safety standard using certification as marketing tools

CERTIFICATION FOR FOOD SAFETY

- Organic Certification
- GAP Certification

Three Categories of Food Safety Hazards

Food safety hazard is …….

any chemical,

biological, or

physical substance or property

that can cause fresh fruit to become an unacceptable health risk to consumers.

Chemical Hazards

Chemical contaminants in fresh fruit and vegetables may occur naturally or may be added during production, harvesting, and postharvest handling of fresh produce

Some examples of contamination: Agrochemical residues, non-agrochemical contaminants (fuels, lubricants and sanitizers), heavy metals

Physical Hazards

Physical hazards are foreign objects that can cause illness or injury to consumers.

Contamination can occur during production, harvesting and postharvest handling.

Some examples of contamination: Soil, stones, sticks, weed seeds, wood, metal, plastic, paint flakes, jewelry, personal items

Biological hazards

Microorganisms are organisms that are small and can only be seen through a microscope. They are found everywhere in the environment

Pathogenic microorganisms affect consumers health and cause illness

Some types of pathogenic microorganisms are bacteria, parasites and viruses

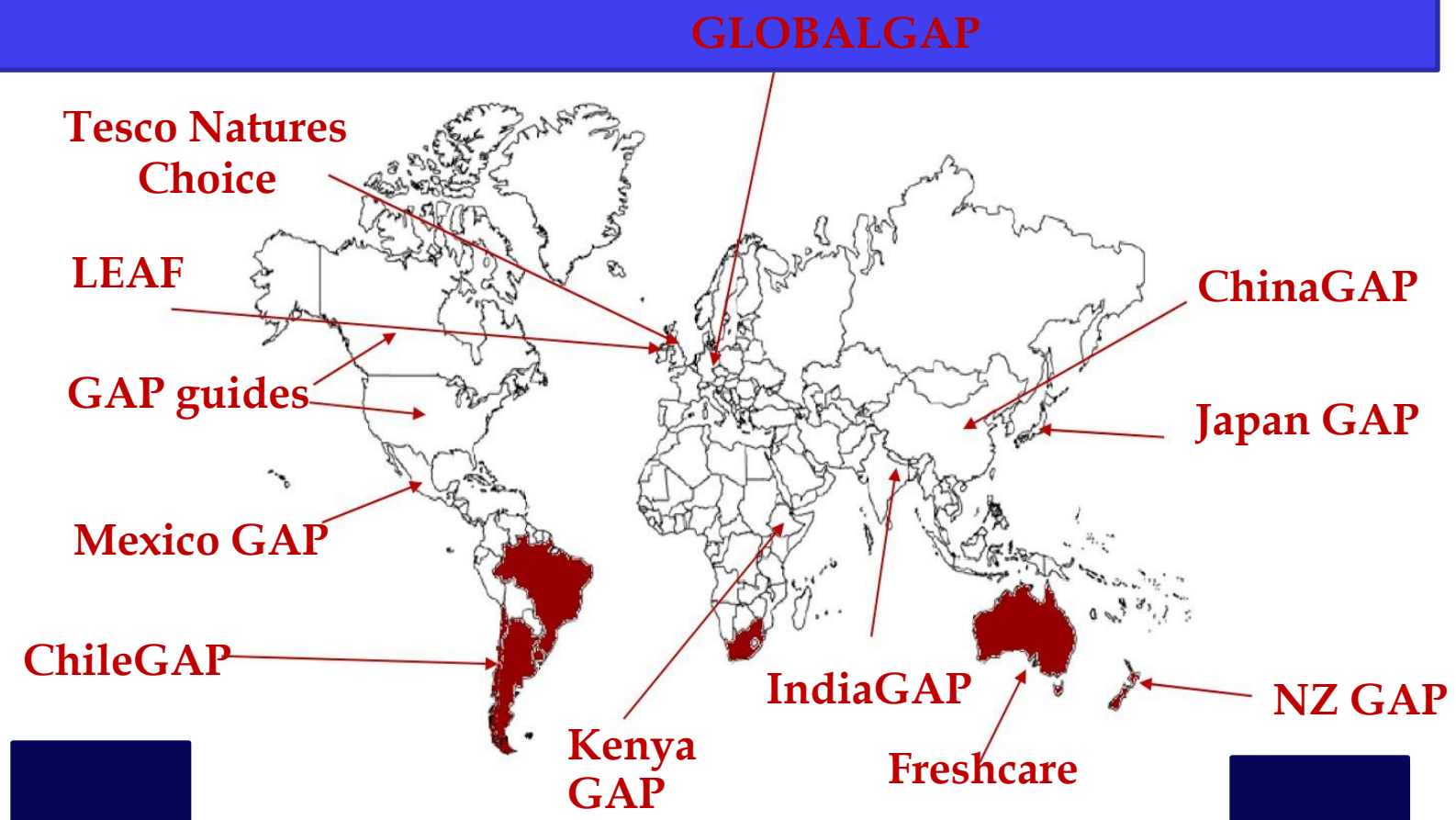
Organic PGS System initiation in Myanmar

Initiated by ADB Project and IFOAM as technical assistance

PGS Common Themes

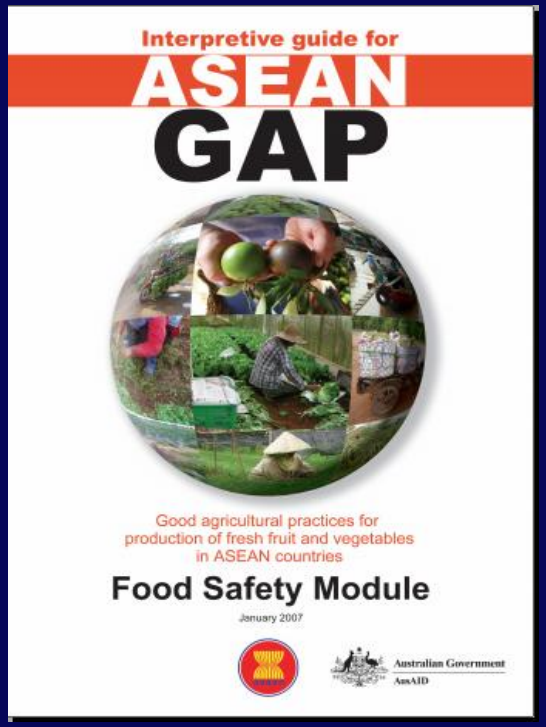
1. Shared vision
2. Participatory
3. Transperancy
4. Trust
5. Learning process
6. Horizontality

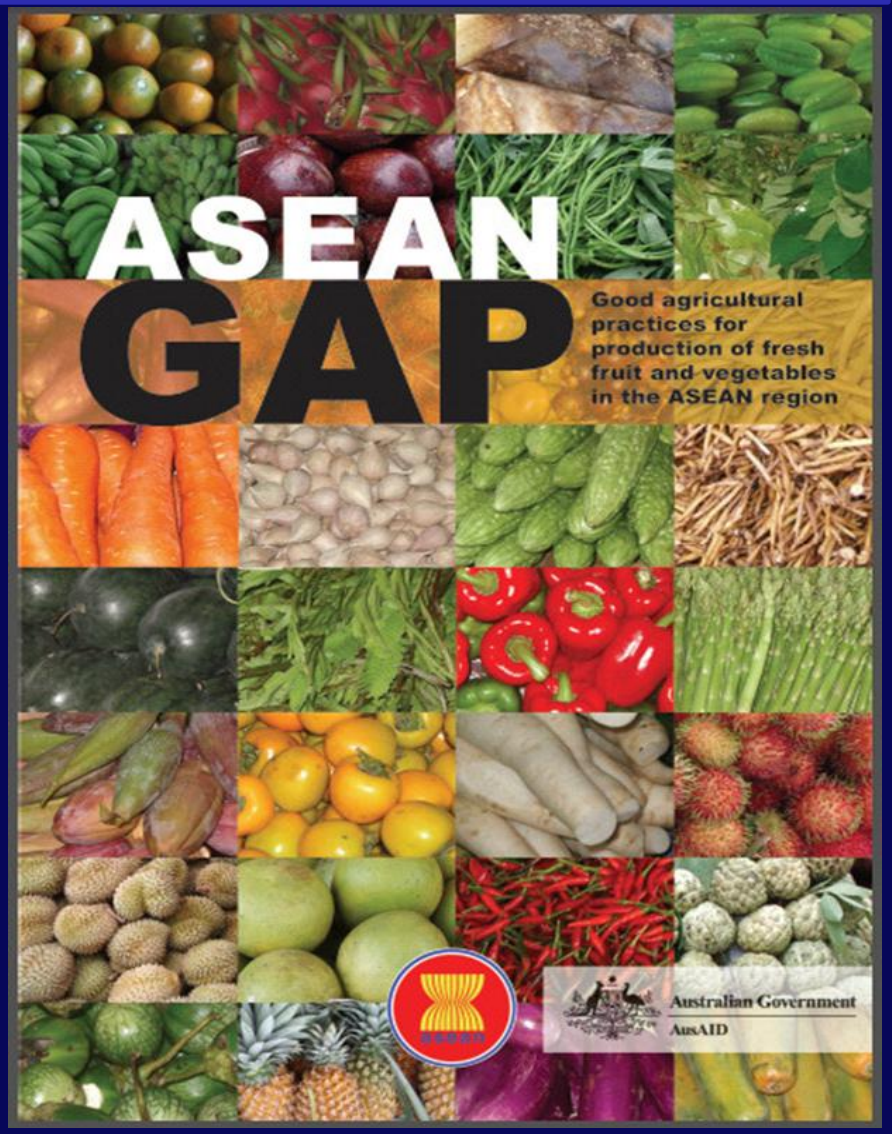
GAP in the world



ASEAN _GAP Standard Module Four Modules

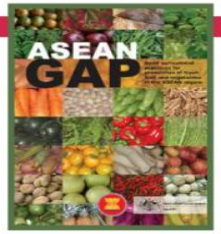
1. Food safety,
2. Environmental management,
3. Worker health, safety and welfare and
4. Produce quality.





ASEAN GAP Modules

ASEAN GAP Modules



Food safety

Produce quality

Environmental management

Worker's health, safety, welfare

Management Practices that Reduce Contamination

WORKER AND FIELD SANITATION

- Clean and sanitize storage facilities before harvest, picking tools, harvest bins, packing area, equipment, and floors daily
  - Teach workers about proper hand washing

Harvest and Post-harvest Prevention

- Pick dry fruit
- Leave fruit that has bird dropping on them
- Use clean bags or buckets for collection
- Train workers the importance of hand-washing
- Cool fruit quickly
- Exclude animals from orchard and packing facilities
- Use potable and chlorinated water
- Clean bins and containers should be used to transport fruit

Market Linkage and Contract Farming

Aspects of Food Export Trade Strategies

Exporter Perspectives	Importer Perspectives

▪ Excess productive capacity
▪ Export-led growth policy
▪ Gain foreign reserve, surplus balance of payment
▪ Create employment
▪ Build global competitiveness – productivity, sustainability, quality
	▪ Trade balance utilizing tariff controls
	▪ Trade balance utilizing non-tariff barrier
	▪ Sincere safety concern of importation of fresh food, plant and live animal
	  ▪ Protection of food safety, hygiene and health of consumers
	  ▪ Plant flora and animal health protection

Criteria in Making Exports Work

Developing an exportable product

- Selecting the right product for the right market
- Identify and create the product marketing attributes
- Building the product competitiveness

Building the capacity to export

- Logistics infrastructure *
- Empowering / organizing production capacity of farmers
- Training the workers

Compliance to Standards constraints

- Myanmar mandatory food safety standards
- Voluntary sustainability standards

WTO - Agreement on the Application of the Sanitary and Phytosanitary Measures

The WTO SPS Agreement aims at:

1. The protection of animal or plant life or health of a territory from risks arising from the **entry, establishment, or spread of pest**, disease, disease-carrying organisms, or disease-causing organisms.

2. The protection of human life or health of a territory from risks arising from diseases carried by animals, plants, or products thereof, or from entry, establishment, or spread of pests.

3. The protection of human or animal life or health of a territory from risks arising from additives, **contaminants, toxins, or disease-causing organisms** in foods, beverages, or feedstuffs.

The HACCP System

Hazard Analysis and Critical Control Points (HACCP)

The principles prescribe requirements to be met throughout the cycle of production, processing and distribution, via hazard analysis, identification of the critical points, needed to be kept under control in order to guarantee food safety

1. Identify **hazards** and prevent, eliminate or reduce to acceptable levels,
2. Identify the **critical control points (CCP)** at steps at which control is essential,
3. Establish **critical limits** beyond which intervention is necessary,
4. Establish and implement effective **monitoring** procedures at the CCPs,
5. Establish **corrective actions** when monitoring indicates a CCP is breached,
6. Implement check procedures to **verify** measures are working effectively,
7. **Keep records** to demonstrate effective application of these measures and to facilitate official controls by the competent authority.

Approaches in Minimizing Pesticides Residue in Fresh F&V

1. **Selection of pesticides**
   - Confirm permissible use of active ingredient
   - Appropriate and effective active ingredient (toxicity, persistency)
   - Contact or systemic pesticides, avoid broad spectrum pesticides
   - Method of application in the fields (foliar or ground)
   - Method of application post-harvest (washing, waxing, paint)
2. **Follow label instructions**
   - Dosage, spray calibration (High / low volume)
   - Field coverage
   - Number of repeated spray and frequency of spray
   - PHI - Pre-harvest spray interval
3. **Other considerations**
   - Mode of Action of active ingredient
   - Weather conditions in the fields before and after pesticides application

The accumulation of residue is the sum of application considerations, its metabolites, and pesticide persistency

Good Agriculture Practice, GAP

Agriculture is a Science

- The farmer needs to understand the biological functions and the chemical consequences of the production systems
- The farmer needs to know the next course of logical responses to any interferences to the crop cycles

Agriculture is a Business

- In business there is always risks involved
- There shall be competition
- The farmer must be aware of the things going-on outside his farm that could have an impact to his marketing his crop
- The farmer must have some form of linkage into the market

Fruits Festivals and Farmer Market

Union of Myanmar Federation of Chamber of Commerce and Industry

Partnership with

Ministry of Commerce

Lanmadaw Township , Yangon
Yangon Division

ANNUAL EXHIBITION , DISCUSSION WITH GROWERS,BROKER AND TRADERS OF MFFVPEA

Exhibition and Discussion Extend to Flowers Growers

Pomelo Exhibition

Exhibition and Competition

Pomelo Competition Prize Winners

Mango Festival 10-12. 5.2014

Mango Festival 10-12. 5.2014

Mango Packing House funded by FAO in Mandalay Region

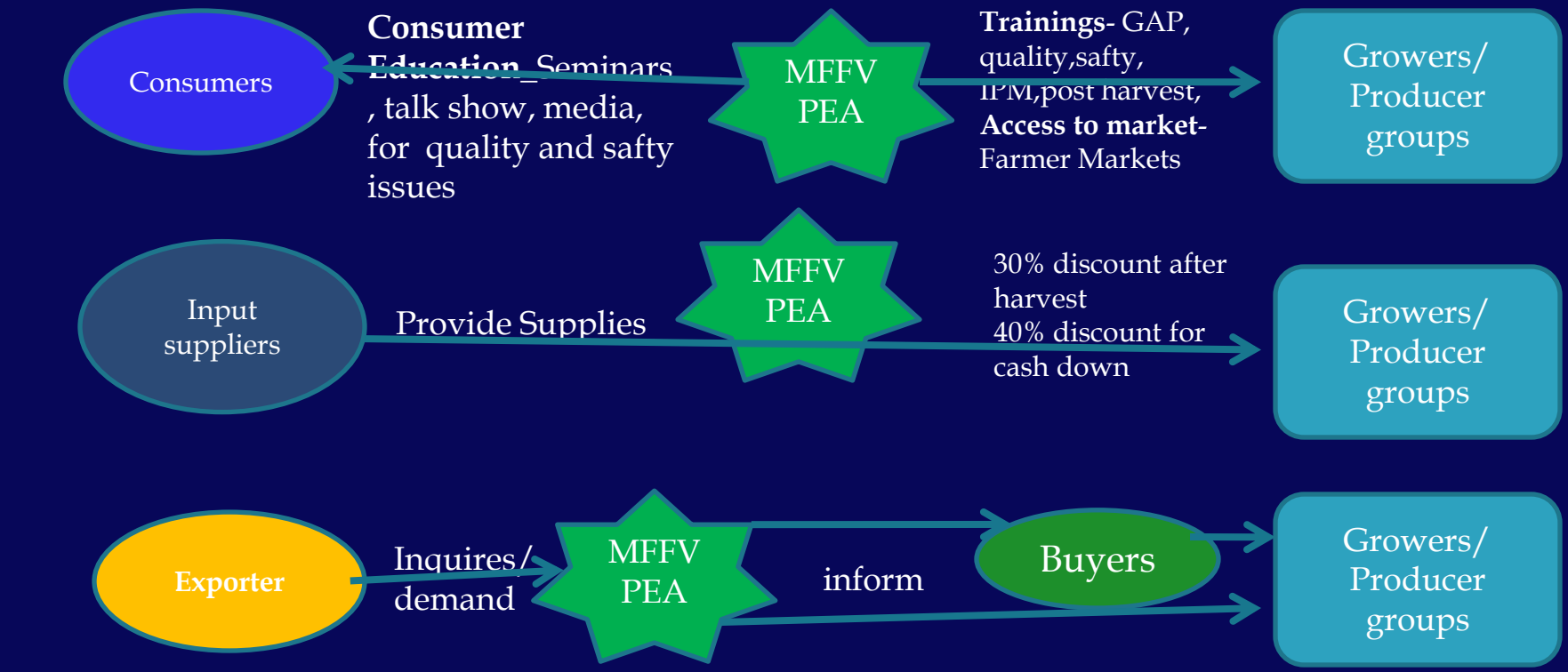
Farmer Market

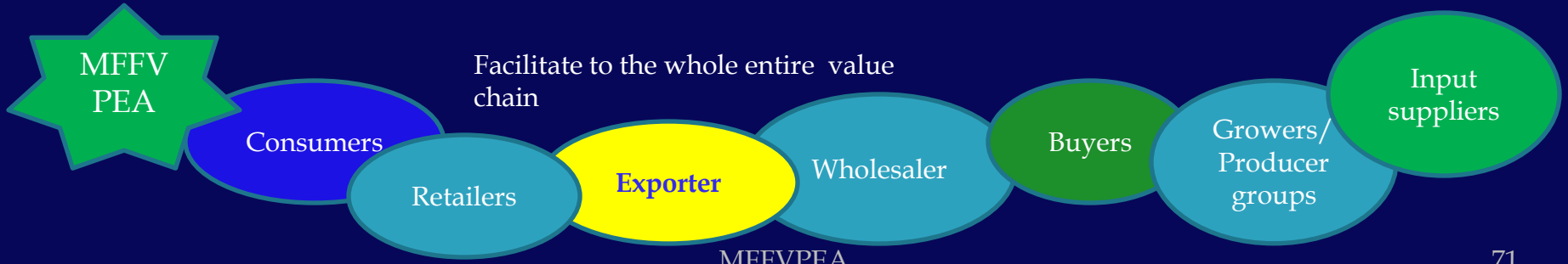
This market is making linkage directly to consumers and growers who will not need to charge for the brokers . Farmer Market was arranged by MFFVPEA

Market Linkage_ Yangon Division Farmer Market

Farmer Market_ Yangon Division

Support and management of MFFVPEA



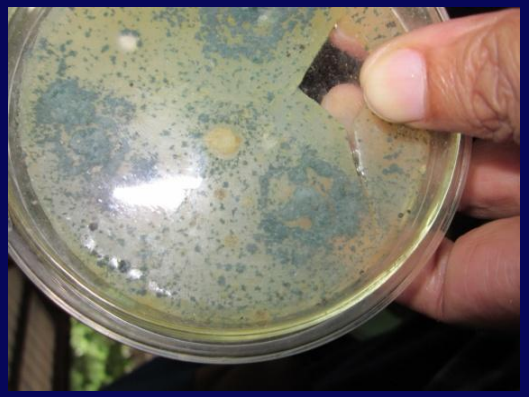


First Training Activities

10	• Selected Students of Agriculture On Job Training to ISRAEL
30	• Local Growers, Journalist, NGO and INGO staffs
10	• Business Persons (Hotel , Tourism, Fertilizer ..etc.)

Practical Lessons at Training

- ✓How to formulate Fish Amino Acid
- ✓Fermented Fruit Juice
- ✓Composting with Farm Waste
- ✓Dochatkkhin (Indigenous Microorganism IMO)
- ✓Groundnut Rhizobium and how to culture on local materials.
- ✓*Trichoderma harziaum* inocculation



ORGANIC AGRICULTURE TRAINING NO.II (18-22.9.2010)

Vermiculture and EM at VFRDC and CARTC, HLEGU, Ministry of Agriculture and Irrigation

Training for Disable Persons

Organic Agriculture Training No. 5
Yatsauk , Southern Shan States
(10 to 14 .1.2011) collaborated with Myanmar Agriculture Services

Organic Training Bogalay with GRET INGO

Practical Lessons how to make fertilizer

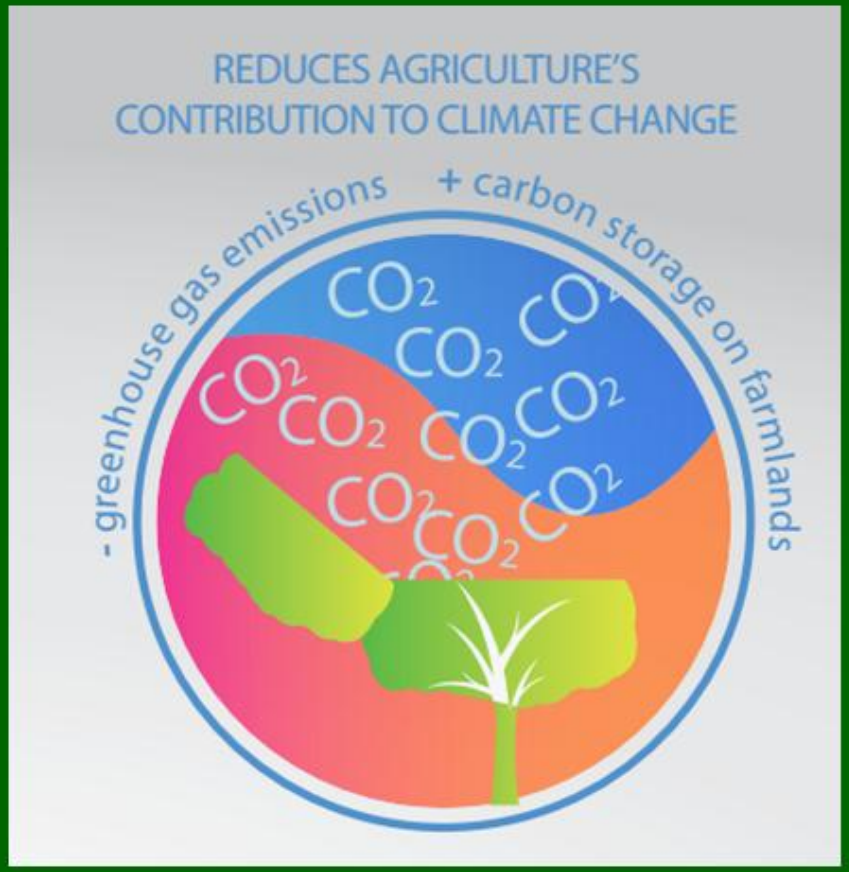
Balancing with Yield improvement and Sustainability

Agriculture System in Climate-Smart Agriculture

သီးနှံ သစ်တော ရောနှော
စိုက် ပျိုးသည့် နည်းစနစ်

မြေဆီလွှာ
ထိန်းသိမ်းသည့်စိုက်ပျိုး
နည်းစနစ်များ

Agriculture System to adapt the Climate Changing



Strengths and Limitations

- **Strengths**
  - Members from entire fruit and vegetable supply chain
  - Sound coordination with other related departments, strong resources pool from Institutes, MAS, MAPT, Private sectors **(Strong PPP)**

Limitations

  - Volunteer based, limited focus on specific model
  - Limited time and financial resources against with expected activities
  - Weak IT system for database, therefore, low efficiency to respond to need of members, other stakeholders and need of market

Future Activities to fulfill our weakness

- Linkage with foreign investment companies for export of fresh fruits and vegetable.
- Discussion with local and foreign people to invest in post-harvest industry for value added products. Value chain system improvement with GIZ.
- Trying to establish cold storage facilities throughout supply chain system and exporting.
- Enhancing the members capacity to participate and keep abreast with ASEAN level growers.
- Connection with SME education center, to develop small scale growers.

Support from GIZ

- Discussion with local and foreign people to invest in post-harvest industry for value added products. Value chain system improvement with GIZ.

Thank You for Kind Attention