AGRIBUSINESS COMMODITY SYSTEMS APPROACH TO ERADICATING LOW INCOME AND MASS POVERTY IN PHILIPPINE AGRICULTURE

By Edward S. Tayengco

Objectives

1. To discuss the agribusiness commodity systems concept as an approach to understanding the marketing of farm products and their impact on farm prices and income

2. To explain the cost-price squeeze theory of low income and mass poverty in agriculture and the poverty trap

3. To discuss the agribusiness coordinating institutions and devices that evolved under the free market policy and under the public utility policy and their effectiveness or non effectiveness in raising and stabilizing farm prices and income, enhancing producer market power and increasing marketing efficiency of farm products.

Objectives

4. To discuss producer-controlled marketing boards as agribusiness tools in solving the problem of low income and mass poverty in agriculture
5. To get reactions from participants regarding the topics discussed in the meeting

Definition of Systems

System

- A system is an assemblage of interrelated parts that work together by way of some driving force(e.g. to earn reasonable profits by satisfying consumer needs directly or indirectly).
- Systems are often visualized (modeled) as component blocks that have connectives drawn between them.

Definition of Systems

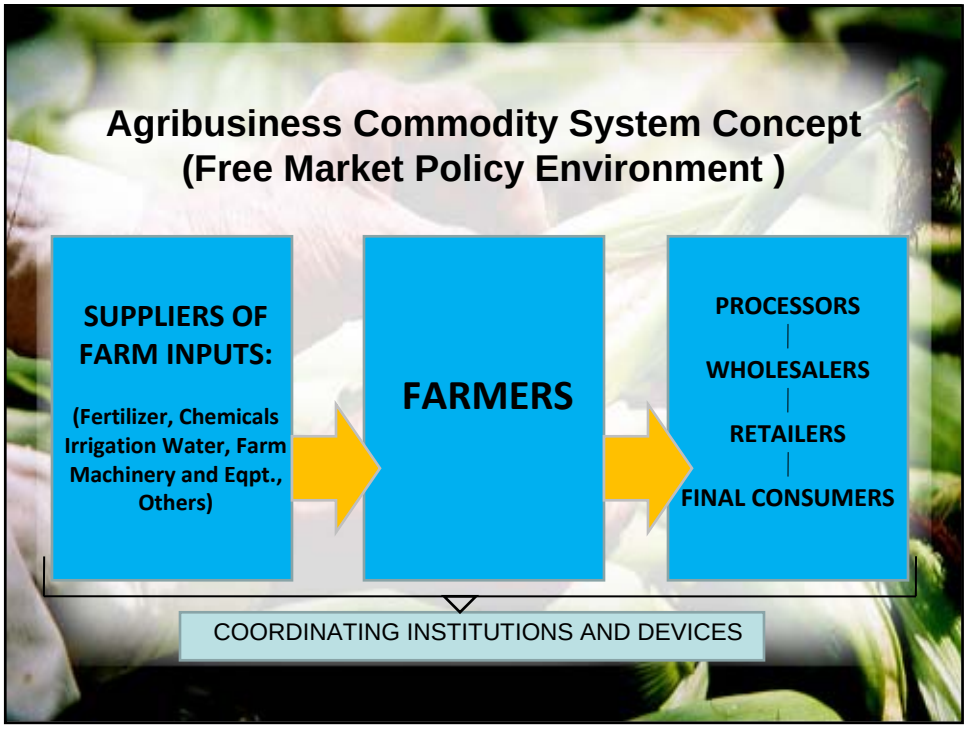
Economic Systems

- An economic system is a mechanism (social institutions) which deals with the production, distribution and consumption of goods and services in a particular society.
- Composed of people, institutions and their relationship to resources such as the convention of property. It addresses the economic concerns like the allocation and scarcity of resources.

Definition of Systems

Agribusiness Commodity System

- Consist of institutions and processes involved in the production and marketing of a farm commodity until it reaches final consumers.
- Consist of suppliers of farm inputs, farmers, processors, wholesalers retailers final consumers and coordinating institutions and devices involved in the production and flow of a commodity to the final consumers


Agribusiness Commodity System Concept
(Free Market Policy Environment)
SUPPLIERS OF FARM INPUTS:
(Fertilizer, Chemicals Irrigation Water, Farm Machinery and Eqpt., Others)
FARMERS
PROCESSORS
WHOLESALERS
RETAILERS
FINAL CONSUMERS
COORDINATING INSTITUTIONS AND DEVICES


Coordinating Institutions
Under Free Market Policy
• Government
• Voluntary Cooperatives
• Bargaining Associations
• Commodity Futures Exchanges
• Financial Institutions
• Educational Institutions
• Research Institutions
• NGO's

Coordinating Devices Under Free Market Policy

- Infrastructures (Roads, etc)
- Telecommunication Systems
- Standardization and Grading Systems
- Trading Stations
- Contractual Arrangements
- Free Market Prices
- Dismantling of Monopolies
- Collection and dissemination of Market Information
- Plant and Animal Disease Quarantine

Coordinating Institutions Under Public Utility (Supply Management) Policy

- Government
- Voluntary Cooperatives
- **Marketing Boards (Compulsory Cooperatives)**
- Associations
- Commodity Futures Exchanges
- Financial Institutions
- Educational Institutions
- Research Institutions
- NGO's, Others

Coordinating Devices Under Public Utility (Supply Management) Policy

- Infrastructures (Roads, etc)
- Telecommunication Systems
- Trading Stations
- **Administered Prices**
- **Quota System**
- Standardization and Grading Systems
- Vertical Integration
- Horizontal Integration
- Contractual Arrangements
- **Acreage Control**
- **Subsidies**, Others

Component Relationships

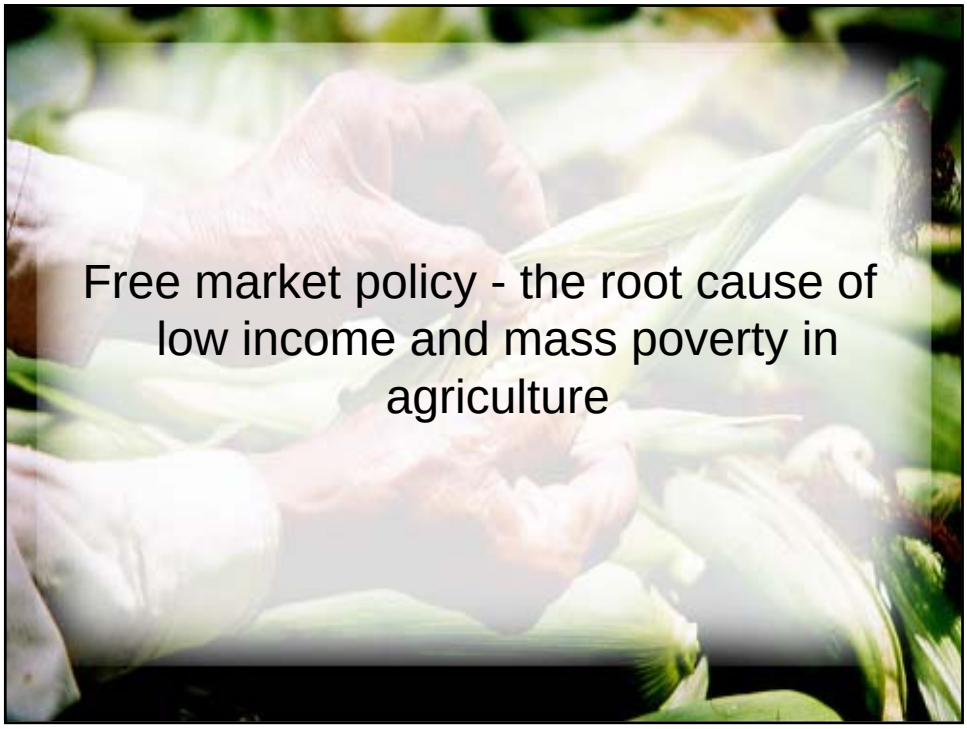
- Functional Relationship
- Competitive Relationships
  - Rivalry among sellers
  - Rivalry among buyers
  - Rivalry between sellers and buyers

Types of Competition in the Commodity System (Free Market Policy)

- Competition in the farm sector is classified under near perfect market competition
- Competition in the non farm sectors are classified under imperfect market competition

Consequence of Near Perfect Market Competition to Farmers

- Subject farmers to the **"Cost Price Squeeze Phenomenon"**
  - **Results to low farm income and mass poverty**



The Cost-Price Squeeze Theory of Mass Poverty

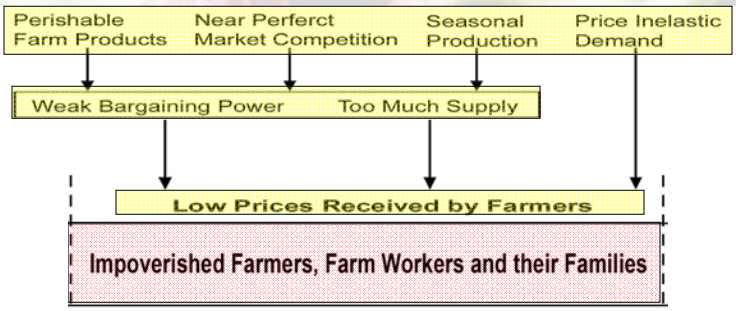
Statement of the theory:

Perfectly competitive farmers who operate under conditions:

- Near-perfect market competition
- Price-inelastic demand
- Imperfectly competitive suppliers of farm inputs

- Are perpetually subjected to cost-price squeeze that makes farming hardly profitable in the long term.
- As a consequence, mass poverty is created among farmers, farm workers and their families who depend mainly on farming for their livelihood as they will earn generally low income and will have difficulty getting employed in non-farm enterprise

The Poverty Trap in Agriculture



Market Power (Richard L. Kohl and Joseph N. Uhl)

Definition: The ability to advantageously influence markets, market behavior, or market results. It may take the form of influence over

1. Prices
2. Demand
3. Product Flows
4. Quality
5. Marketing Functions
6. Other Market Behavior of Firms

Bargaining Power (Richard L. Kohl and Joseph N. Uhl)

Definition: The relative strength of buyers and sellers in influencing the terms of exchange in a transaction

Perishable Farm Products

- Perishable farm products weaken market and bargaining powers of farmers who grow them because they are constantly under pressure to sell their produce before they spoil
- They are predisposed to accept prices offered by buyers even at low prices

Seasonal Supply of Farm Products

- 1. Seasonal production weaken market and bargaining powers of farmers if producers are under pressure to sell their produce because

  a. They need cash badly

  b. Obligated themselves to sell their produce at harvest time to their respective creditors

- 2. Seasonal production creates too much supply during the harvest season if consumption is relatively even throughout the year

Near Perfect Market Competition

- The concept of near perfect market competition will be explained by the investigating the seven types of market competition
  1. Perfect Market Competition
  2. Near Perfect Market Competition
  3. Monopolistic Competition
  4. Oligopoly
  5. Oligopsony
  6. Monopoly
  7. Monopsony

Table Showing the Extent Different Types of Real Life Competition are Close to or Far from Meeting Conditions of Perfect Market Competition

Perfect Market Competition	Distance From Perfect Market Competition			
	Near Perfect Market Competition (Farmers)	Monopolistic Competition	Oligopoly/ Oligopsony	Monopoly/ Monopsony
1. Very Many Sellers	?	X	X	X
2. Very Many Buyers	X	X	X	X
3. Undifferentiated Products	?	X	X	X
4. Market Instantaneously Communicated to All Buyers and Sellers	X	X	X	X
5. All Sellers and Buyers have Equal Market Info	X	X	X	X
6. All sellers and Buyers Use Info Rationally	X	X	X	X
7. Mobile Factors of production	X	X	X	X

Diagram Showing Harsh Competitive Environment of Farmers Under Free Market Policy/Prices

Parties to an Exchange Transaction	Types of Competition	Marketing & Bargaining Power	Price Objectives
Processors Traders	**Imperfect Market Competition** • Monopsony • Oligopsony	• Strong • Strong	↓ Buy Low
Farmers	**Near Perfect Market Competition** • Many Sellers • Undifferentiated Products	• Weak • (Produce Too Much)	↑ Sell High ↓ Buy Low
Suppliers of Farm Inputs	**Imperfect Market Competition** • Monopoly • Oligopoly • Monopolistic Competition	• Strong	↑ Sell High

Conditions of Near Perfect Market

(Competition that Weaken Producer Market and Bargaining Power)

1. There are many farmers selling undiferrentiated products to:
    1. Single Buyer (Monopsony)
    2. Few Buyers (Oligopsony)
2. Buyers have more and better quality market information and get them much ahead of time of farmers
3. Buyers are more knowledgeable and skillful in marketing than farmers
4. Too many farmers competing. Farmers are many in number but small individually. They cannot price their products.

Conditions of Near Perfect Market Competition that Encourage Farmers to Collectively Produce too much Supply

1. Farmers are many in number but small individually. No single farmer or group of farmers is big enough to influence prices
2. Production output of each farmer or group of farmers is microscopic in size compared to total supply and demand of the commodity
3. From the individual farmer point of view, demand for his product is unlimited. He can sell everything he can produce.

Collectively Farmers Tend to Produce Too Much Supply

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Price Inelastic Demand

- Price elasticity of demand is an analytical instrument that measures the inverse movement of quantity demanded relative to the movement of prices of the product.

$$\text{Price Elasticity of Demand (PED)} = \left(\frac{\text{Percentage Change in Demand}}{\text{Percentage Change in Price}}\right)$$

$$= \left(\frac{\frac{\text{Change in Demand}}{\text{Average Demand}}}{\frac{\text{Change in Price}}{\text{Average Price}}}\right)$$

Two Categories of Demand Based on Elasticity

- Price Inelastic Demand

  - Price Inelastic Demand is demand with price elasticity of less than 1

- Price Elastic Demand

  - Price Elastic Demand is demand with price elasticity of more than 1

Most farm products are price inelastic

Example of Price Inelasticity of Demand Computation

- Demand for strawberry is:
  (a) equal to total production (supply) assuming that strawberry is produced in the Philippines only once a year
  (b) inelastic since the price elasticity of demand is 0.25 (less than 1). This means **that every 1 percentage point increase in demand** will need a **4 percentage point decline in price** (1÷0.25 = 4).
- Farmers earned more in **Year 1** in spite of poor harvest (P120/kilo x 950,000 kilos = **P114,000,000**) and earned less in **Year 2** when harvest was bigger (P80 /kilo x 1,050,000 kilos= **P84,000,000**)
- In Year 3 by increasing the supply to 1,200,000 kilos or an increase of 20 % more than the average production of 1,000,000 kilos of year 1 and year 2 [(950,000 + 1,050,000) ÷ 2].
- Price of strawberries down to P 20 / kilo to increase total demand to 1,200,000 kilos that would match total production. The decline in price is 80% of the average price of P100 per kilo for Year 1 and Year 2.
- At the price of P20 per kilo, strawberry farmers would be incurring losses of P40 per kilo (P20 – P 60 = - P 40)

Given:
Commodity = strawberry
Production & Demand in Year 1 = 950, 000 kilograms
Production & Demand in Year 2 = 1,050,000 kilograms
Production & Demand in Year 3 = 1,200,000 kilograms
Price in Year 1 = P 120/kilo
Price in Year 2 = P 80/kilo
Average production cost of Year 1 & Year 2 = P60.00/kilo
Demand schedule Years 1, 2, and 3 = Constant

$$\text{Price Elasticity of Demand (PED)} = \frac{\text{Percentage Change in Demand}}{\text{Percentage Change in Price}}$$

$$= \frac{\dfrac{\text{Change in Demand}}{\text{Average Demand}}}{\dfrac{\text{Change in Price}}{\text{Average Price}}}$$

$$= \frac{\dfrac{1,050,000 - 950,000}{\dfrac{1,050,000 + 950,000}{2}}}{\dfrac{P120 - P80}{\dfrac{P120 + P80}{2}}}$$

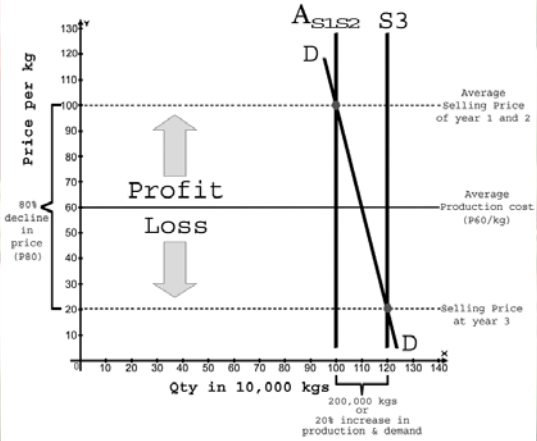
$$= \frac{\dfrac{100,000}{1,000,000}}{\dfrac{P40}{P100}}$$

$$= \frac{.10}{.40}$$

$$= 0.25$$

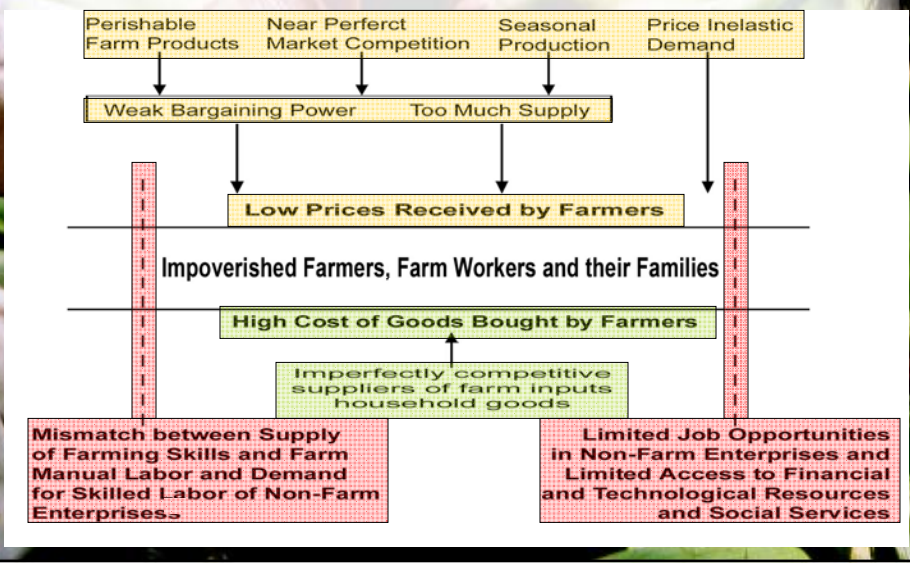
(less than 1 therefore inelastic)

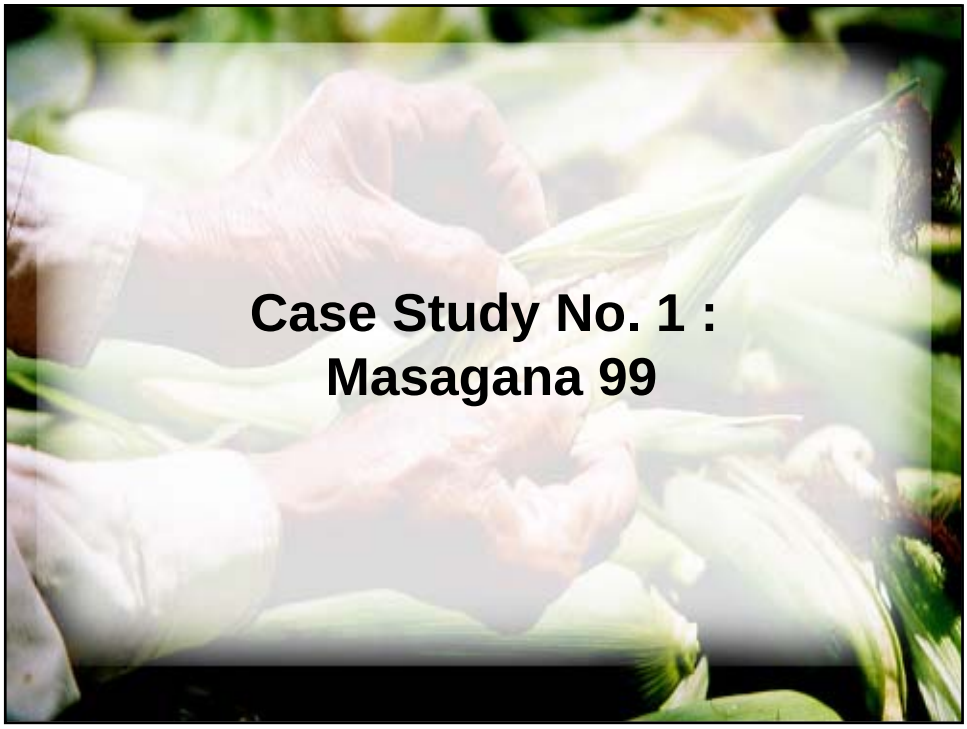
Graph Showing Effects on Prices and Farm Income of Strawberries with Price Inelastic Demand of 0.25 at Increasing Levels of Supply



Farmers tend to produce too much supply, that is why prices of agricultural products are normally too low under near perfect market competition

The Poverty Trap in Agriculture





Case Study No. 1 : Masagana 99

- Objectives
  1. To attain self sufficiency in rice
  2. To raise income of rice farmers
- Strategy: Accelerate the adoption of a package technology involving the use of high yield varieties developed by IRRI and the application of fertilizers and chemicals through extension service and provision of credit
- Resources mobilized:
  1. 6000 agricultural technicians
  2. All credit institutions
  3. P2 Billion Fund
  4. 530,000 irrigated rice farmers
- Outcome

  -Masagana 99 failed to achieve the program objectives

  The Philippines became self sufficient only in the initial years but not in the latter years (not sustained)

  -Failed to raise real farm income

Lessons from Masagana 99

- 1. Since 1933 rice farmers in the Philippines have operated under a de facto free-market policy because the National Food Authority (NFA) and its predecessors NGA, RCA and NARIC have consistently failed to defend the support prices that they set year after year.
- 2. As demonstrated by Masagana 99, rice farmers that operate under the free-market policy earn low income whether or not farmers are
  (1) lazy or industrious
  (2) lacking or sufficient in capital and education
  (3) stubborn or flexible
  (4) using antiquated or modern farming technology.
  (5) tilling irrigated or unirrigated farms
  (6) accessible to good transportation and communication systems or not and
  (7) having large or small families.
- 3. The country was self-sufficient in rice only during the initial years of Masagana 99. This indicate that rice farmers are not reliable suppliers of rice as long as they are not profitable.

Case Study No. 2 : Evolution Of Agricultural Economic Policy In Developed Countries

Table Comparing Free Market Policy and Public Utility Policy Environment For Agriculture by Selected Features

Policy / Features	Free Market Policy	Public Utility Policy
PERIOD ADAPTED BY DEVELOPED COUNTRIES	Before 1929	After 1929
PHILOSOPHY / BELIEFS	Government should have minimal direct intervention in marketing decisions. Free market prices best mechanisms for coordinating supply and demand for agricultural products	Agricultural products especially food essential to survival and security of society. Government should maintain strong intervention in supply and prices of farm products and keep commercial famers economically healthy
IMPLEMENTING TOOLS	Development of infrastructure grades and standards, Collection + dissemination of market information, Development of voluntary cooperatives , plant and animal quarantine, Dismantling of monopolies	SAME (except dismantling of Monopolies) + Establishment of coordinating devices such as producer controlled marketing boards w/ monopoly power, administered prices production quotas etc

Public Utility Policy

- Based on the philosophy that farm products especially food are essential to the survival and security of society.
- Farming → should be treated like public utilities to keep commercial farmers economically healthy and reliable suppliers of raw materials and food at reasonable costs to industries and consumers.
- Powerful and proven tool used by developed countries to implement the new policy is called producer-controlled marketing boards.

Table Comparing Free Market Policy and Public Utility Policy Environment For Agriculture by Selected Features

Policy / Features	Free Market Policy	Public Utility Policy
IMPACT ON MARKET AND BARGAINING POWER OF FARMERS	WEAK MARKET AND BARGAINING POWER	STRONG MARKET AND BARGAINING POWER
IMPACT ON MARKETING AND PRODUCTION EFFICIENCY	Unstable farming system Longer chain of middlemen Less Efficient marketing system	Stable farming system Shorter chain of middlemen More efficient marketing system
IMPACT ON FARM PRICES AND INCOME	Low and unstable farm prices and income Abet Mass Poverty	Higher stable farm prices and income Eradicate Mass Poverty
READINESS FOR EMERGENCY AND WAR MOBILIZATION	Less Ready	More ready
STRATEGY	Make Near Perfect market Competition More Perfect	Make Competition Less Perfect
ROLE OF GOVERNMENT	ENABLER	ENABLER

Lessons from the Evolution of Agricultural Policy of Developed Countries

- Mass poverty thrived among farmers of developed countries when they adopted the free-market policy and vanished after they adopted the public utility policy for agriculture.
- In the Philippines, mass poverty is flourishing because the country's policy makers continue to adopt the free-market policy for agriculture.
- There is a symbiotic relationship between the agriculture sector and the industry sector.
  - Agriculture supplies raw materials and food to industry and serves as market for products of industry.
  - Under a free-market policy this symbiotic relationship is weakened since farmers would be economically unhealthy, unreliable suppliers of food and raw materials and a weak market for industrial goods and services.

Lessons from the Evolution of Agricultural Policy of Developed Countries

- Under a public utility policy the symbiotic relationship is strengthened because the farm sector will be economically healthy, reliable supplier of food and raw materials and an adequate market for products and services from industries.
  - This strengthened relationship contributed to the rapid and stable economic growth of the developed countries.
- There is a growing trend towards trade liberalization among countries.
  - This means countries have to open their markets by reducing if not eliminating trade and non-trade barriers.
  - In the field of agriculture and agribusiness, developed countries that adopted the public utility policy for agriculture will have production and marketing efficiency advantages over developing countries like the Philippines who have adopted the free-market policy for agriculture.

Producer-controlled Marketing Boards

- This system involved organizing farmers into compulsory cooperatives and legally vesting them with monopoly powers to organize the marketing of commodities.
- Their objective is to control supply in order to (1) raise farm prices and income (2) producer market power and (3) production and marketing efficiency.

Recommendation

- For the Department of Agriculture to organize a team to study the desirability of organizing and operating producer-controlled marketing boards in the model of developed countries such as, Canada, New Zealand, Israel and Taiwan

Table Showing Summary of Advantages of Producer-Controlled Marketing Boards

Functions/ Systems	Producer-Controlled Marketing Boards System	Free Market System
A. Price Determination Functions and other terms of change		
Persons Involved		
Number	Few	Many
Competence Level	High	Lopsided
Location	Board Room	Many scattered places
Market Information		
Quality	High	Lopsided
Dissemination	Equal	Lopsided
Power		
Market Power	Equal	Unequal
Bargaining Power	Equal	Unequal
Price Level	Higher to farmers	Generally low prices for farmers

Multiple Effects of Public Utility Policy

- Higher and more stable farm prices
- Higher and more stable farm income
- Higher standards of living in the rural areas
- Farm sector becomes an adequate market for expansion of industries
- More employment is generated by industries to absorb excess farm labor
- Farm sector will be a reliable supplier of raw materials for industries
- Increased marketing efficiency