

# Agricultural Diversification, Intensification and Integration as a Strategy to Supply the Needs of a Highly Diversified Diet

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# Introduction

- ❑ Industrial agriculture a system of chemically intensive food production substantially increase food production, however, negatively impact health, ecosystems and social equity, and may have consequences for farmers and their long-term capacities to provide a stable food supply.
- ❑ Alternative agriculture approaches were developed to reduce the health, environmental, social and economic impacts associated with industrial agriculture. These alternative food production systems were directed to small farmers, strengthen local economies and allow consumers to connect with the origins of their food
- ❑ The benefits of these food systems still not yet equally shared

# Introduction

- There is a need to produce food that are rich in all the essential micronutrients, available in sufficient quantities, affordable, and accessible to people all year round to provide the needs of a highly diversified diet.

# Basic Filipino Diet

- ❑ Filipinos love to eat, and are naturally hospitable and friendly, food is the basis of their social life.
- ❑ They eat three meals of white rice a day and two starchy snacks in between.
- ❑ Filipinos also enjoy noodles which are usually mixed with meat and flavorings.
- ❑ Soups and stews made with meat and vegetables are
- ❑ Filipino diet is higher in fat, saturated fat and cholesterol, compared to other Asian countries.
- ❑ Filipinos also consume a lot of sugar and use high amounts of cooking oil.
- ❑ Complete meal is laid before them and eat simultaneously from all dishes like soup, meat, and vegetables at random.

# A Healthy Diet

- ❑ Overall health is maintained by developing a healthy habit of eating wide variety of foods to support the activities of day-to-day living, protect cells from environmental damage and repair any cellular damage that might occur.
- ❑ Protein rebuilds injured tissue and promotes a healthy immune system. Both carbohydrates and fats fuel the body, while vitamins and minerals function throughout the body in support of the body's processes.
- ❑ A healthy diet emphasizes plenty of fruits, vegetables and whole grains which are high in complex carbohydrates, fiber, vitamins, and minerals, low in fat, and free of cholesterol.
- ❑ Rest of the diet should come from low-fat dairy products, lean meat and poultry, and fish

# Integrated Rice-Based Agri-Bio Systems (IRBAS)

## PALAYAMANAN Plus

- ❑ Is an approach with the end in view of increasing farmers' income and to ensure food and nutrition security in a sustainable manner.
- ❑ The nucleus estate strategy (Nuestra) provide services such as technologies and technical assistance, enterprise development, product development and processing, mechanization, capacity enhancement, financing and marketing to the community of rice farmers venturing into modern farming

# Palayamanan Plus Production Framework

## Diversification

- ❑ Promotes diversified food crops such as rice, corn, vegetables, including fruit and vegetable trees.
- ❑ Food from animal origin including cattle, buffalo, goat, sheep, hogs, chicken and ducks.
- ❑ Different fish species, crustaceans and snails
- ❑ Several mushroom species a

# Palayamanan Plus Production Framework

## Intensification

- ❑ Approach to ensure stable and sustainable food supplies as precondition for the establishment of food security
- ❑ Crop combinations are altered in time and space to enhance productivity
- ❑ Rice production is intensified into three crops per year using early maturing varieties
- ❑ Short duration crops like mungbean or young corn can be planted during the fallow period after rice



# Palayamanan Plus Production Framework

## Intensification

- ❑ Some vegetables and other cash crops can be planted on bunds simultaneous with the rice crop, and other crops are planted after rice cropping
- ❑ Intercropping or relay cropping also enhances crop intensification
- ❑ Duck and fish, and vegetables can be integrated with the rice crop (Rice-Duck, Rice-Fish and Sorjan Production System).

# Palayamanan Plus Production Framework

## Integration

- ❑ **Vertical integration** where production, processing and marketing to gain control of the supply and value chain of the main product which is rice and its by-products
- ❑ **Forward integration** is the development and marketing of other products like seeds production, palay & rice trading, brown rice, GABA rice, flour and other processed products and by-products

# Palayamanan Plus Production Framework

## Integration

- ❑ **Backward Integration** is the inclusion of relevant inputs in the production aspects such vermicompost produced from the spent mushroom substrate and animal manure, bio-ethanol and other inputs
- ❑ **Horizontal Integration** is the inclusion of the production, processing, and marketing of rice-based commodities, like non-rice crops (vegetables and fruit trees), livestock, fish, and mushroom production.

# Palayamanan Plus Production Framework

## Integration

- ❑ Product development through the promotion of appropriate and improved technologies for preservation and processing of vegetables and fruits and other products reduce wastage
- ❑ The establishment and strengthening of small-scale agro-industries on food processing contributes to the year-round availability and variety of micronutrient-rich foods in the markets, and stimulate demand for farmers' crops and products and give consumers additional choice.
- ❑ Agro-processing industries also create jobs and incomes from such activities as processing, storage, distribution and marketing.

# Palayamanan Plus Production Framework

## Multifunctional

- ❑ Multifunctional approach of *Palayamanan* Plus recognizes interconnectedness of agriculture's different roles and functions in producing not only commodities to sustain the needs of a highly diversified diet but also non-commodity outputs such as environmental services and landscape amenities.

# Summary

- ❑ Agriculture provides the vast majority of our food supply
- ❑ Industrial agriculture characterized with heavy reliance on chemical inputs increased food production but created negative impact to health, ecosystems, and social equity, and affected farmers' capacities to provide a stable food supply.
- ❑ The negative impacts of industrial agriculture have been reduced with the development and promotion of alternative agriculture in recent years.
- ❑ However, the benefits of food systems were believed to be not equally shared, accessed and unaffordable to low-income families.

# Summary

- ❑ To achieve the needs of a highly diversified diet, more foods should be produced, available in sufficient quantities, affordable, and accessible to people all year round.
- ❑ Our health is maintained by eating a wide variety of foods to support the activities of day-to-day living, protect cells from environmental damage and repair any cellular damage that might occur.
- ❑ A healthy diet consists of plenty of fruits, vegetables and whole grains.

# Summary

- ❑ *Palayamanan* Plus respond to the need of increasing farmers' income and enhance food and nutrition security in a sustainable manner.
- ❑ It is a farming systems framework that embarks on diversification, intensification, and integration of different farming ventures such as crops, livestock, aquaculture, mushroom, fruit trees and biomass recovery system.
- ❑ Its nucleus estate strategy, services such as technologies and technical assistance, enterprise development, product development and processing, mechanization, capacity enhancement, financing and marketing are provided to farming communities.



# Summary

- ❑ The multifunctionality of *Palayamanan* Plus in diversifying, intensifying and integrating several production and processing of food crops and food from animal origin can address the need for a highly diversified diet.

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