

Sustainable Agriculture in Thailand



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Outline of presentation



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➤ Background

- Description of Sustainable Agriculture
- Rules of Sustainable Agriculture in Thailand
- Summary of sustainable agriculture and implement
- Future directions of Sustainable Agriculture in Thailand



Description of Sustainable Agriculture

- In 1960s, The government of Thailand focused export – oriented cash crop as monoculture gain.
- This agriculture scope ramped up productivity with use of machine, chemical fertilizers, herbicides and insecticides.
- This leads to farmer got amount of debt because of declining productivity and purchased too much chemicals.



Five key factors improving Sustainable Agriculture in Thailand

- Integrated Farming System
- Organic Farming
- Natural Farming
- Agroforestry
- New Theory Farming





Integrated Farming System

- This system is used when two or more different agriculture activities are in the same fields.
- This lowers costs for farmers and utilizes limited spaces to their maximum potential.

Organic Farming



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- Organic farming limits the quantities of herbicides, pesticides and fertilizers used in farming.
- By using less harmful chemicals, the soil and land are protected.
- This branch of sustainable agriculture is researched by the Thai government, various universities and NGOs.



Natural farming

- Natural farming is considered the ideal sustainable farming model for many areas in Thailand.
- It includes farming with no tillage, no application of chemicals and complete preservation of the ecosystem with little damage from farming.

Agroforestry



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- This approach enables cash crops and cattle to coexist with trees and forestry land.
- As such, it amplifies the ability to utilize the land for sustainable agriculture while also promoting reforestation.



New Theory Farming

- Proposed in 1993 by His Majesty King Bhumiphol Adulyadej, New Theory Farming is ideal for farmers with limited field allotments and a shortage of water resources.
- The concept highlights self- sufficiency by dividing the available land into four parts and utilizing each for various needs.

New Theory Farming



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- These include fish ponds/raising, fields for crops and vegetable, a rice paddy for self- consumption and space for living and livestock raising.
- These proposals, set out to improve farming techniques and promote sustainable agriculture in Thailand, are critical in developing a healthy environment and economy for future generations.



New Theory Farming

- ***What is sustainable farming ?***
- Sustainable farming *means producing food, fiber, plant or animal products without harming natural resources, land and considering social responsibility.*
- Such as working and living conditions of farmers and workers, the needs of rural communities, and health and safety of the consumers both in the present and the future.

New Theory Farming



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- ***Why it is important for our wellbeing ?***
 - It takes into account economic viability and profitability and integrates it with environmental health and social and economic equity.
 - Ideally, sustainable farming meets the needs of the present generation without damaging the ability for future generations to meet their needs.

Stop crop disease



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- Sustainable farming involves crop rotation where crops are grown according to the season on the same land.
- This prevents crop diseases and also the risk of wiping out entire crops due to intensive **monoculture**.



Prevent soil erosion

- Crop rotation leads to healthier soil and improved pest control methods besides promoting diversity.
- Intercropping and growing cover crops prevent soil erosion and also helps replenish nutrients along with minimizing weeds.



Prevent soil erosion

- Managing irrigation to reduce runoff is another practice that helps prevent soil erosion.
- Traditional methods like tilling and ploughing and using organic manure and fertilizers help improve soil quality.

Reduce pollution and use of chemicals



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- Sustainable farming reduces pollution by using natural fertilizers and using fewer chemicals.
- This means that farm produce is healthier and better for you.
- Farmers also build shelters to keep natural pest eliminators such as bats, birds and insects who work to keep pests away.
- Even the waste produced by sustainable farming goes back into the farm's ecosystem and does not pollute the environment.



Sustainable farming

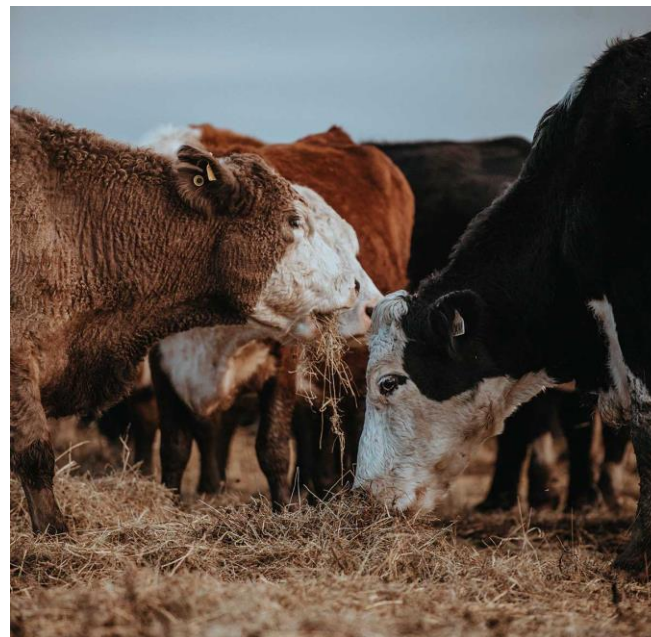
- Sustainable farming incorporates integrated pest management to identify pests in the initial stages and target spraying only for particular pests limited to a particular area.
- This way it does not affect the bio-diversity and protects the natural wildlife.



Sustainable communities

- An important aspect of sustainable farming is that it remains economically viable for farmers, farm workers, and others who are employed in the food system so that they make a livable wage and work in a safe environment.
- *Sustainable farming encourages the resurgence of smaller family-run farms that strengthen the rural community which benefits everyone.*

Sustainable communities



Healthier Food



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- Food produced by sustainable methods has more nutrients in it as it avoids dangerous chemicals and pesticide.
- Crop rotation also guarantees more nutrients in fruits and vegetables while livestock farmers raise animals in a human way without any dangerous practice.
- For example, the use of growth hormones and non-therapeutic antibiotics.
- The food also tastes better and safe for consumers.



Improve animal welfare

- Sustainable farming improves the welfare of animals by raising animals on pasture and letting them move freely.
- Animals consume their natural diet and are treated humanely by the farmers.
- Animals are not stressed and are healthier thus needing fewer medications.

Environment preservation



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- Sustainable farming methods protect biodiversity and the environment and it fosters growth and maintenance of healthy ecosystems.
- Sustainable farming integrate whole systems and landscapes as **part of the farm which support biodiversity.**

Environment preservation



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- Sustainable farming mixing trees and shrubs along with growing crops.
- Farmers provide shade and shelter to plants, animals and water resources.





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Renewable energy sources

- Sustainable farming relies less on non- renewable energy which is substituted with renewable energy.
- For example, solar power, hydro energy or wind power.
- By labour to the extent that it is economically feasible.
- This helps protect the environment from further damage and depletion.



Renewable energy sources

- Water is also managed better with sustainable farming by choosing the right crops for the season.
- Water storage and better irrigation systems are built.
- For example, rainwater harvesting systems to make optimum use of natural resources.



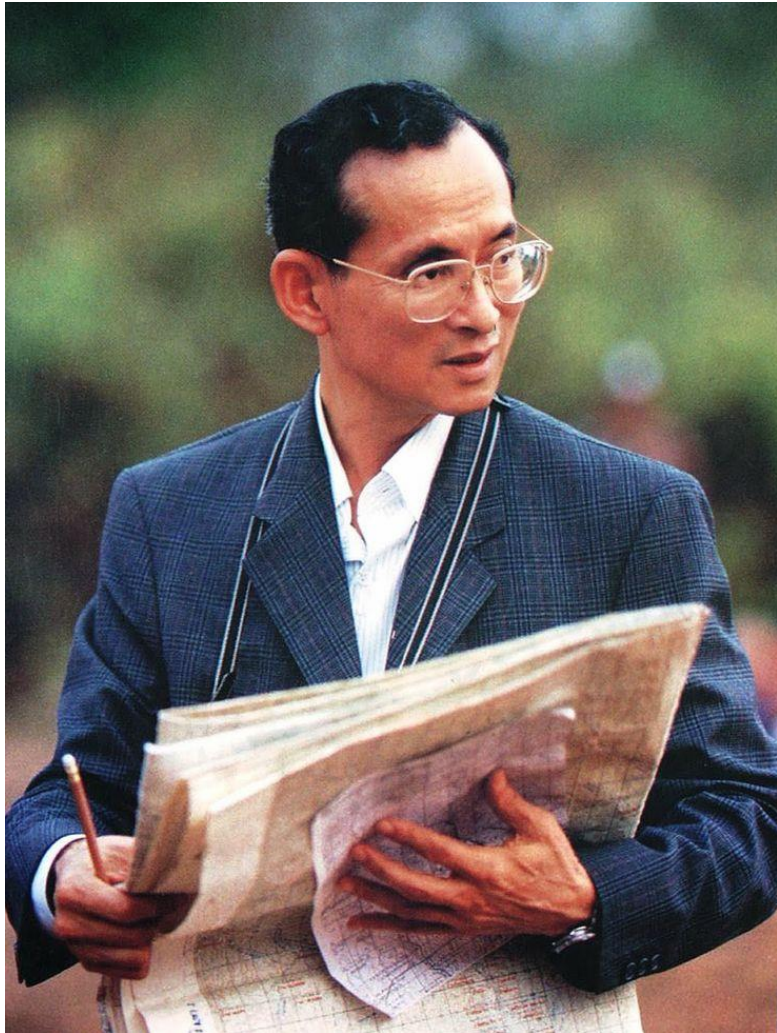
New theory Agriculture

- In 1994, His Majesty King Bhumibol Adulyadej revealed how his ideas should apply to agriculture.
- His scheme was base on a self- reliant family which through progressive stages was integrated with the local and national economics.

New theory Agriculture



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New theory Agriculture



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- From his frequent visits to the people in the rural areas throughout the country.
- His majesty found that the majority of farmers were still in poverty.
- He therefore, worked with agricultural experts and implemented his own farming experiments to develop guidelines for proper management of land and water resources.



New theory Agriculture

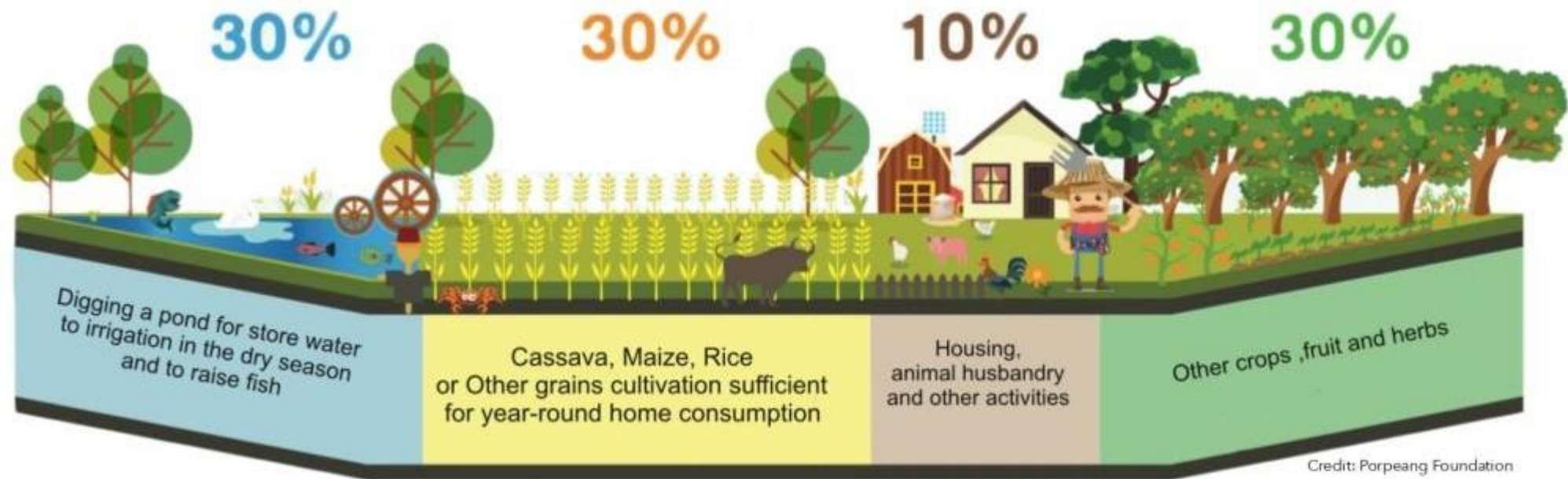
- **There guideline have three stages:**
- **First Stage:** Sufficiency at the household level, or the state of self- reliance.
- **Second stages:** Being sufficient enough to rely on oneself, based on being economical and reducing the expenses.
- **Third Stage:** Loan and credit outreach

New theory Agriculture



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- **First Stage:** Sufficiency at the household level, or the state of self- reliance.



The first stage of the scheme was a farm on a 15 rai (about 6 acres). Divide into 4 parts



The first part: about 30 percent

- The land is for digging of 4 meters deep to store water for agriculture uses.
- The pond or reservoir can also used to raise fish as an important source of protein and including growing aquatic plants to serve as food for family.

The first part: about 30 percent



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The second part: about 30 percent



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- This stage is set aside for main food such as rice, maize, wheat or cassava cultivation.
- By during rainy season for the family's daily consumption throughout the year to cut down on expense and allow the farmers to be self- reliant.

The second part: about 30 percent



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The third part: about 30 percent



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- This section is for growing fruits, perennial trees, vegetables, field crops and herbs for daily consumption.
- If there is any surplus, it will be sold.

The third part: about 30 percent



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The last part: about 10 percent



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- This section is for housing, animals husbandry, roads, and other structures.



New theory Agriculture



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- Soil fertilization, weed control and pest control used natural methods.
- This method was the basic model which could be easily modified to suit holding of larger or smaller sizes and to different regions where soil, water and cropping conditions varied.

New theory Agriculture



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Second Stage: Being sufficient enough to rely on oneself, based on being economical and reducing the expenses.

- This stage aimed to create self-reliance at the community level
- By increasing the production and availability of local goods and service through mobilizing the surplus resources of households with in community.

Second Stage:



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- The idea was to increase the local provision of goods and services by introducing some division of labour to achieve economics of scale and scope.
- At the same time of relying on principally on the community's own capacity and resources.

Second Stage: Being sufficient enough to rely on oneself



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After the first stage



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- The farmers are encouraged to form groups or cooperatives to carry out farming and agricultural activities in the following areas:

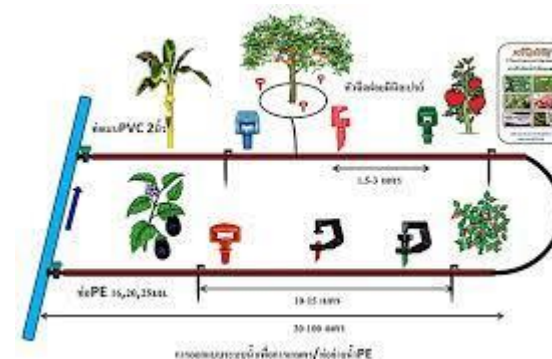
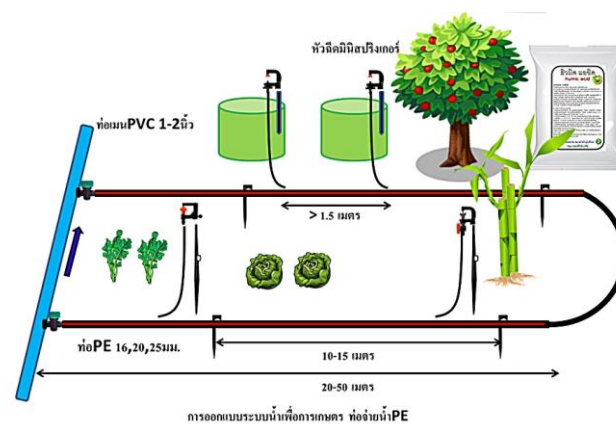
- **1. Production**

- Farmers must cooperate in the production of crops.
- Starting from preparing the soil, obtaining plant species, fertilizer, water supply etc. for cultivation.

Production stage:



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2. Marketing



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- When the rice, cassava, and maize or the other grain are harvested.
- The farmers must be preparations in many areas to gain the highest profits form farmers.
- The farmers will prepare a common drying space in selling the produce to obtain good prices and cut down on expenses.

Marketing



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3. Living conditions

- At the same time farmers must maintain a certain degree of proper living with sufficient basic requisites.
- For example, salt, sugar, and clothing etc.



4. Welfare



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- In each community there should be necessary welfare and service.
- For example, health centre in time of sickness, fund providing catastrophic disaster, or loans to be used to carry out activities in the community.

Welfare



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5. Education

- The community should play an activity role in promoting education.
- For example, setting up an education fund for children in the community.

Education



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6. Society and religion

- The community should be the centre for social and mental development including religion as the binding factor.
- All the aforementioned activities must receive cooperation from all parties concerns whether government or private sector, as well as members of the community.

Society and religion



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Third Stage: Loan and credit outreach



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Third Stage: Loan and credit outreach



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- At the third stage, the community could then engage with the economy beyond the village to sell its excess products.
- To gain the technology for such projects as founding its own rice mill.
- To tap the services of banks and other economic institutions and to negotiate with corporations for mutual advantage.



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Benefits of the New Theory Agriculture

- 1. The people can live moderately at an economical level, without having to starve, and can be self-reliant according to the “ Sufficiency Economy’s philosophy”.
- 2. In the dry season when water is scarce, the water stored in the pond can be used to grow vegetables that can thrive on a small amount of water without having to rely on the irrigation system.





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Benefits of the New Theory Agriculture

- 3. In years when it rains in season with rainwater available all year round, the New Theory Agriculture can earn income for the farmers who do not have to worry about expenses.





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Benefits of the New Theory Agriculture

- 4. In case of floods, farmers can recuperate and help themselves to a certain degree without needing much assistance from the government, a save on the budget in a way.



Case study to apply New Theory



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➤ <https://www.youtube.com/watch?v=ahGtd-5A8Wc&t=686s>

11.34

<https://www.youtube.com/watch?v=g1YwkGRLJ-M&t=291s>

8.04

<https://www.youtube.com/watch?v=jDrzX-WnEhU>

Case study to apply New Theory



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- This theory apply to all many countries in the world such as:
 - Bhutan
 - Cambodia
 - Myanmar



Conclusion

- Sufficiency means ***to lead a reasonably comfortable life, without excess, or overindulgence in luxury, but enough***
- **“Sufficiency”** *mean moderation, reasonableness, and the need of self- immunity for sufficient protection from impact arising from internal and external changes.*