A Comparison study of applying Smart Farming concept in China and Thailand

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Agenda

01 Statement of The Problems

02 Objectives

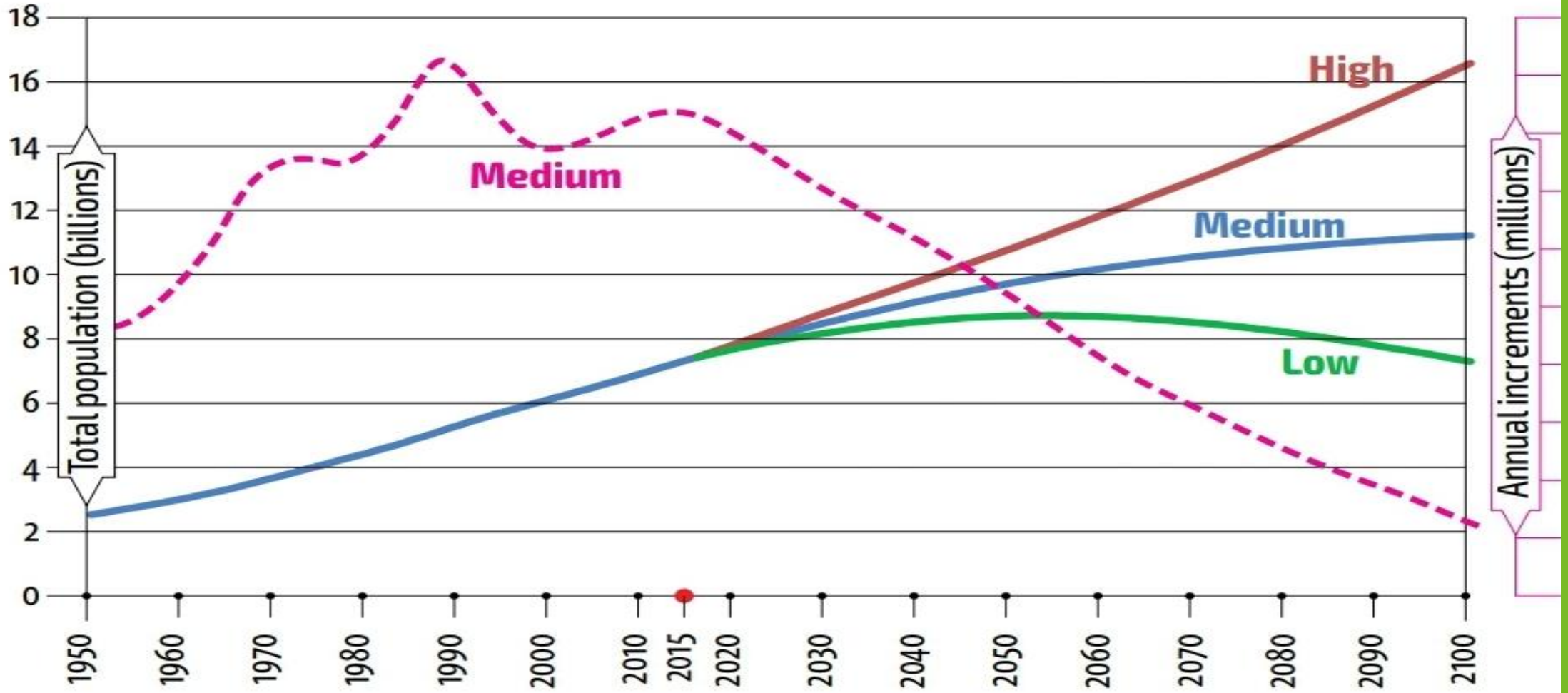
03 Research Methodology

04 Result

05 Suggestions

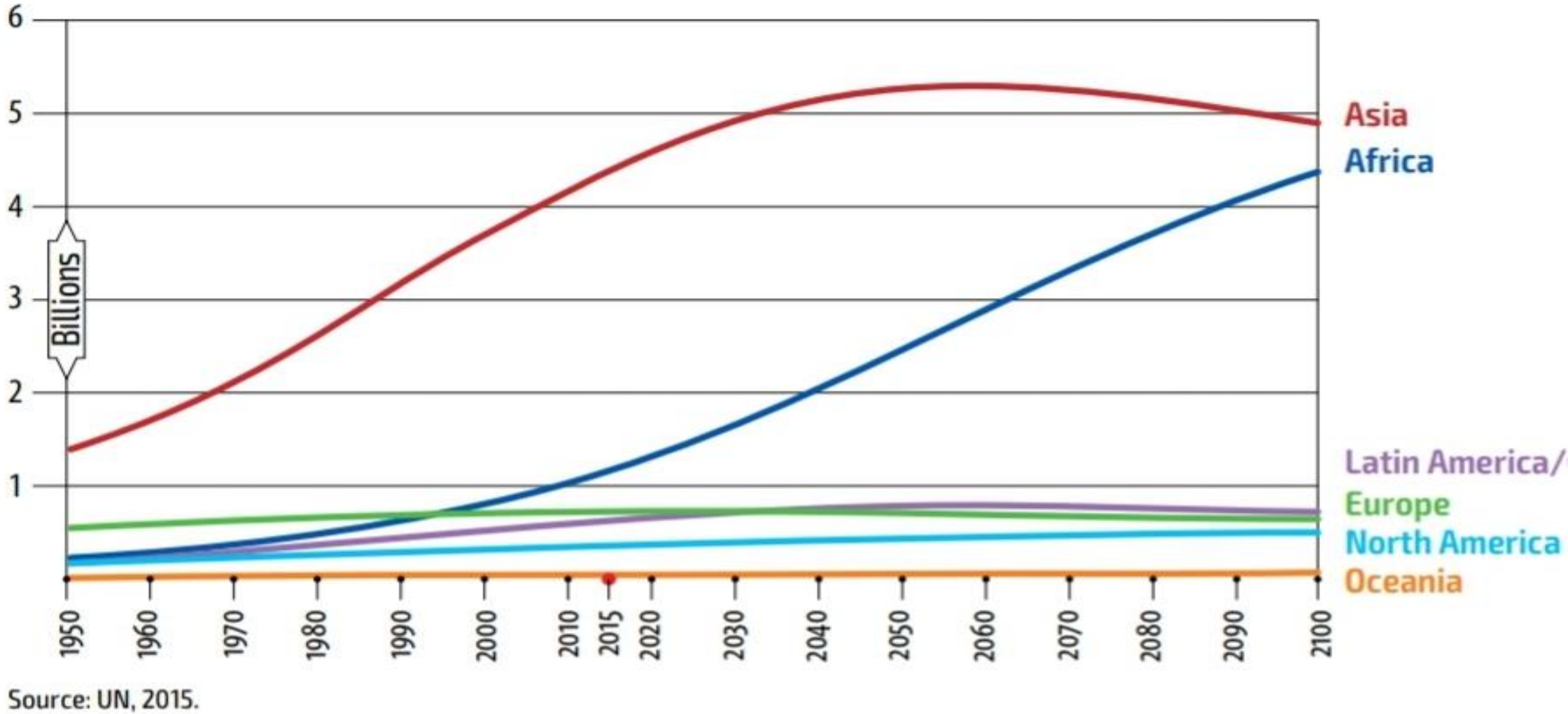
Statement of The Problems

Figure 1.1 Global population growth to 2100, by variant



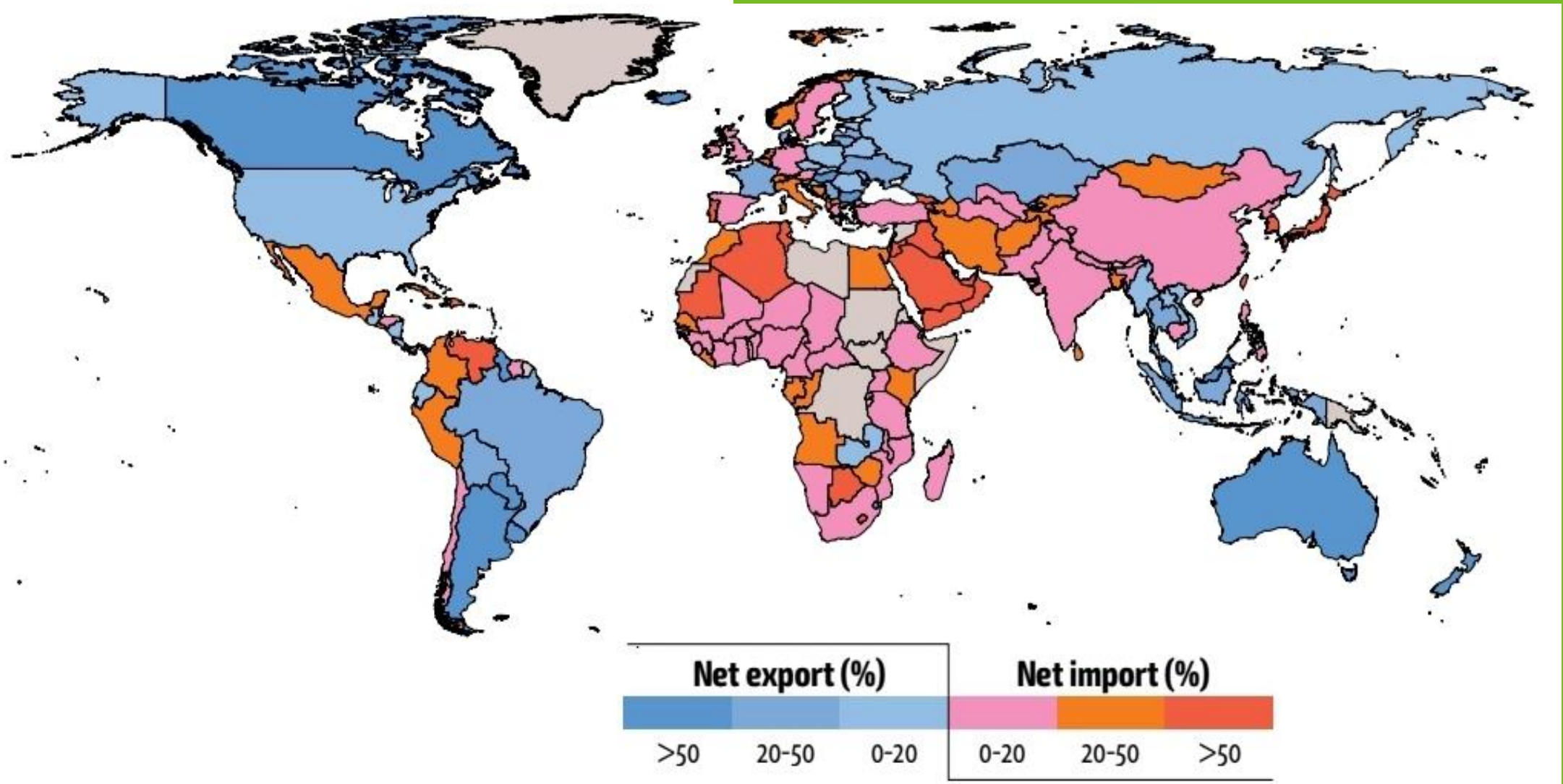
Note: Annual increments are 5-year averages.
Source: UN, 2015.

Figure 1.2 Population growth to 2100, by region (medium variant)



Source: UN, 2015.

Figure 1.3



Source: FAO Global Perspectives Studies, using 2011 food balance sheets from FAO, 2016a.

Agriculture 1.0 - 4.0

Agriculture 1.0

Mechanization – Animal Power

Agriculture 2.0

Mechanization – Combustion engine

Agriculture 3.0.

Guidance Systems and Precision Farming

Agriculture 4.0

Connected Farming

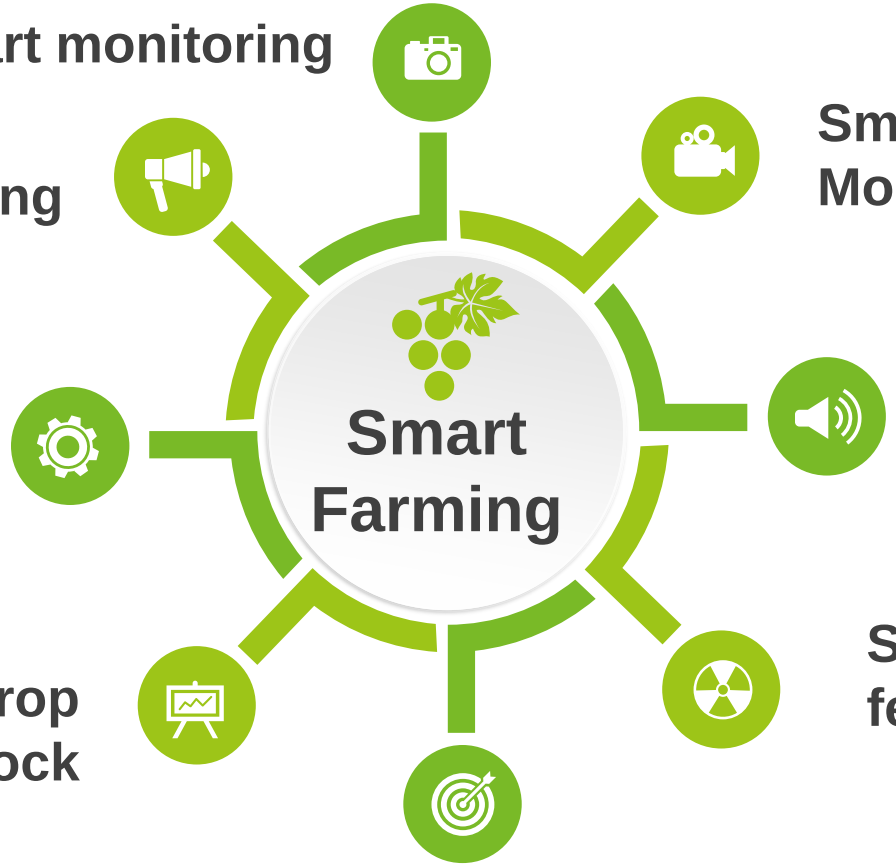
Smart Farming Model

Smart censor and smart monitoring

Smart equipment and monitoring

Smart crop monitoring

Smart predictive for crop and livestock



Smart climate and Monitoring and Forecast

Smart livestock tracking and Geofencing

Smart stat on livestock feeding and procedure

Smart logistic and warehousing

Smart Farming

New Agricultural Paradigm

Future of Farming

Indoor

Vertical Farming

- Plant Factory
- In vitro meat
- Synthetic foods
- Hydroponics/ Aquaponics/ Aeroponics

Urban Agriculture

- Home Farm
- Rooftop Farm

Outdoor

Smart Agriculture

- Precision Farming
- Sharing Agriculture

Geo-engineering

Objectives

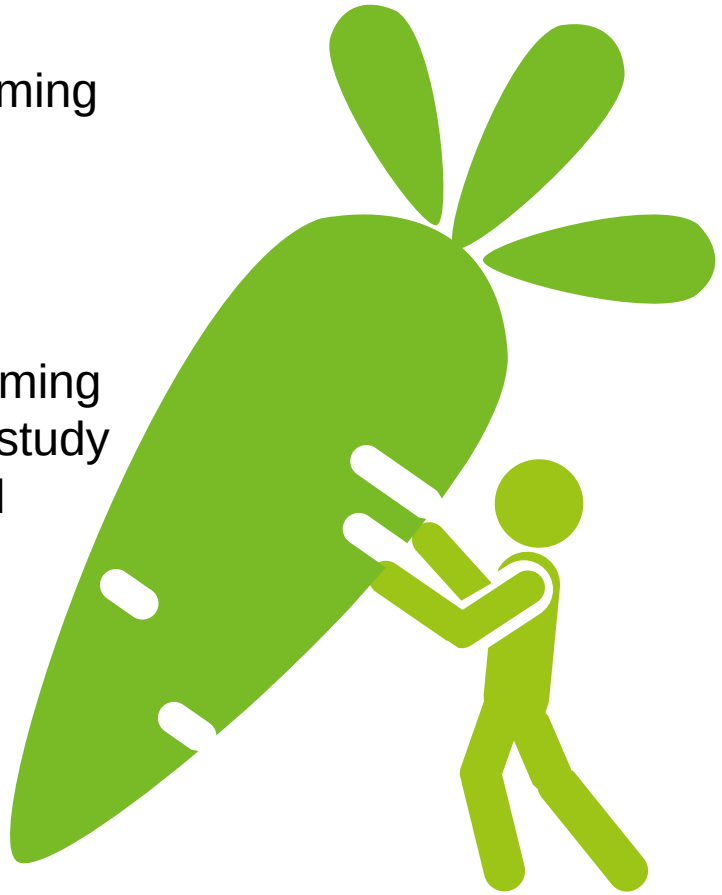
Objectives

01

To study the pattern of Smart Farming concept occurred in Thailand.

02

To study the models of Smart Farming concept adapted in China and to study the linkage of applying mentioned concept in Thailand.



03

To study opportunities and possibilities in enhancing cooperation to strengthen agricultural and economic aspects.

Research Methodology

- This research used historical method using research from analysis and interpretation from social, economic and cultural phenomenon from contexts in each country.
- Study from academic data and document mainly from textbooks, articles, researches and data from online media from both in Thai language and foreign language.
- The collected information would be analyzed and synthesized with descriptive analysis.

Result

Thailand 4.0

From government policy which aimed to drive the country to reach its goal ‘Thailand 4.0’ embodied the vision to diminish the country from medium incomed country to developed country.

The previous economic policy driven based on traditional agriculture to the agriculture which technology in assisting planting, production and selling were applied

develop quality of agriculture as well as production capacity.

Smart Farming and Smart Farmer

The idea of uplifting Thai agriculturist to Smart Farmer, in order to develop agricultural system to Smart Farming and the idea of creating more Smart Farmer have been contained as one part of Agriculture development plan that related to National Economic and Social Development plan continuously since 11th plan until 12th plan in the present (2017 – 2021)

Ministry of Agriculture and Cooperatives, then has set the project to enact ministry's policy to conform with main National policy that require to support transformation of agriculture into Intelligent Agriculture or Smart Farming; by pushing improving agriculturists to Smart Farmer

Infographic Style

The 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016–2020)

focused on reformation in various aspects including Economic structure adjustment for sustainable and growing with quality in the future (New Normal)

Made in China 2025 (MiC 2025)

strategy plan for Chinese development from high scale quantity orientated manufacturer to world leading industrial country for quality orientated products and service.

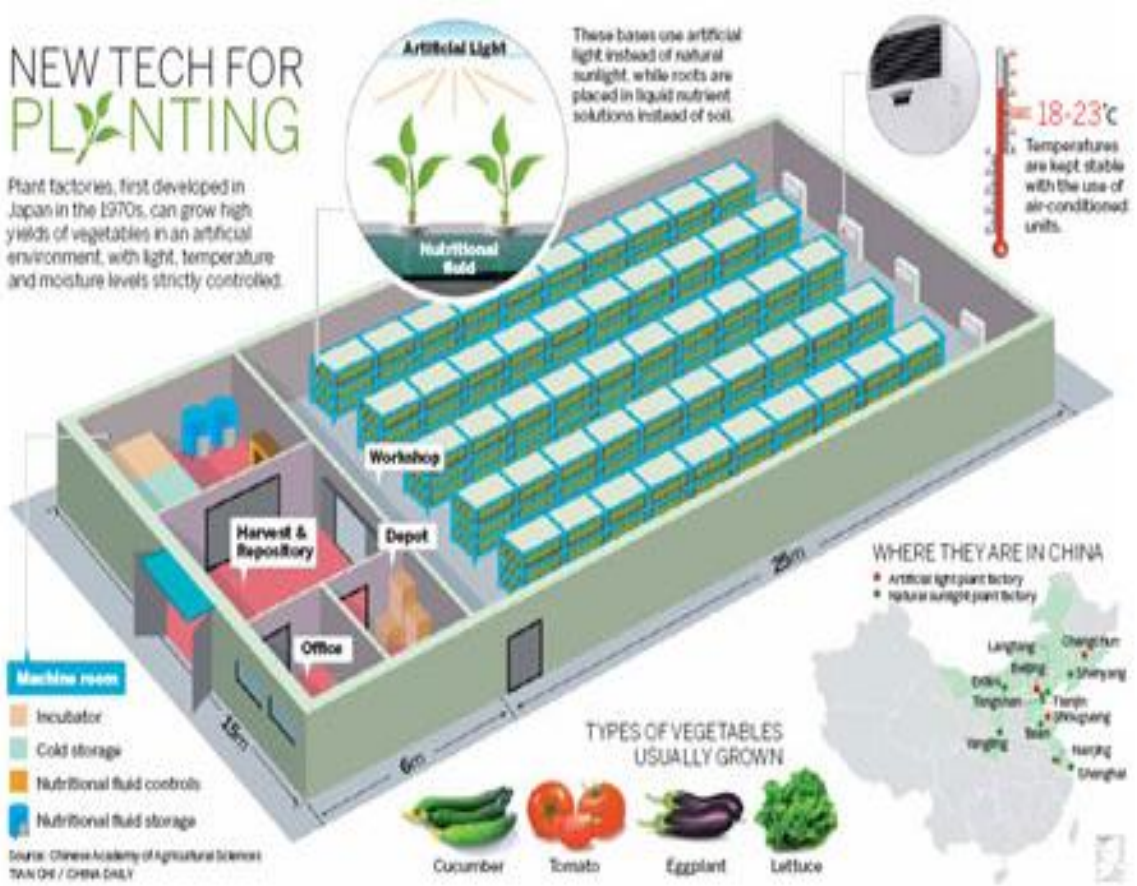
Agricultural Industry Development

implementing modern technology with agricultural work to solve problems of agriculturists.

Chinese Academy of Agricultural Sciences (CAAS)

main sector to research and develop to create innovation in processing fundamental agricultural product to high valued products

Vertical Culture



Plant Factory (1)

Plant Factory (2)

CAAS project has launched agricultural pattern development called “Plant Factory” is another way to do Smart Farming that China began to apply in agricultural industry. For Plant Factory, is a plant producing technology in closed or semi-closed system where environmental conditions are in control for plant’s growth appropriately.

Ministry of Agriculture and Cooperatives collaborated with Ministry of Science and Technology by NSTDA of Thailand noticed the significance of Plant Factory technology that would be beneficial to agricultural sections in producing food for country in the future along the vision of government to develop modern agriculture.

It is noticeable that Smart Farming both in China and Thailand are resemble in many aspects; as the approach to develop China’s agriculture especially applying technology to agriculture and systematically managed in agriculture from the start to the end.

Opportunities and Possibilities

1. Promoting investment in modern agriculture or modern technology and environmental friendly agriculture to adapt in processing step and more effective management, these types of investments are the approach that Chinese government is currently supporting.
2. Promoting investment and offering knowledge in organic food or, non-chemical or non-GMO or artificial substances used agricultural products. These types of products have been rapidly developing in China from the higher demand domestically and internationally

Suggestions

Integration between sectors and organizations should be enacted to accomplish the objectives, even in part of Ministry of Agriculture and Cooperatives, to merge the policy “Intelligent Agriculture” into the plan of “Intelligent Agriculture”

The opportunity of investment from China companies in Thailand to resolve future industrial development issue of Thailand 4.0, is still possible; some part of it conformed with the direction of MiC2025 development or trend of Chinese consumer perfectly. In the dimension of technology import, the industrial development under the “Made in China 2025” policy may influence in a beneficial way for supporting Thailand’s industrial agriculture development.

utilizing from electronic commerce channels and other cooperation, which influence on improve the level of value chain between Thailand and China, as well as competition capacity of the country in long run.

Thank You