

# Advancing Thai Agriculture: Strategic Proposals for a Young Smart Farmer in Thailand

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## Abstract

*The study "Advancing Thai Agriculture: Strategic Proposals for a Young Smart Farmer in Thailand" addresses the critical role of agriculture in Thailand's economy and the challenges it faces, such as climate change, water scarcity, and market volatility. It emphasizes the importance of young smart farmers and innovative solutions like smart farming technologies, sustainable practices, and educational programs to ensure the sector's future sustainability and productivity. The research employs qualitative methods, including interviews and participant observations, to gather data on governmental policies and the preparedness of the next generation of farmers. The findings suggest a need for strategic planning and stakeholder engagement to foster a new generation of knowledgeable, technologically adept farmers. This effort aligns with national strategies to transform Thailand into a knowledge-driven economy, emphasizing sustainable and efficient agricultural practices.*

**Keywords:** *Advancing Thai Agriculture, Strategic Proposals, Young Smart Farmer*

## INTRODUCTION

Agriculture remains integral to Thailand's economic, social, and environmental framework, acting as a foundational pillar for national development and sustainability. Its significance extends across multiple dimensions, influencing economic output, employment, cultural heritage, and environmental management. As a key driver of the economy, agriculture contributes substantially to Thailand's GDP and export earnings. Thailand ranks among the world's top producers of rice, rubber, and seafood, alongside other agricultural commodities (Wani, Pathak & Sahrawat, 2012). The export of these products forms a critical source of revenue, with the nation frequently listed as one of the leading global rice exporters—a testament to agriculture's central role in the country's economic well-being. Furthermore, the agricultural sector underpins other industries such as food processing and agribusiness, thereby amplifying its broader economic impact.

However, despite its foundational importance, Thailand's agricultural sector faces an array of formidable challenges, including the impacts of climate change, water scarcity, land degradation, and market instability. These pressures demand the adoption of innovative strategies and policy frameworks to bolster the sector's resilience and long-term viability. In response, the Thai government, alongside key stakeholders, has intensified efforts to promote sustainable agricultural practices, the integration of advanced technologies, and diversification within agricultural markets, all aimed at safeguarding the sector's future sustainability (Liao, Nguyen & Sasaki, 2022). Nationally, the agricultural sector faces significant structural and systemic challenges that hinder its long-term viability. A large proportion of farmers encounter persistent difficulties in accessing reliable, actionable information and are burdened by severe indebtedness and landlessness. Farmer organizations, which could serve as a collective voice, often suffer from weak institutional frameworks and limited bargaining power. Compounding these challenges is the aging farmer demographic, with fewer individuals stepping forward to assume the role of the next generation of agricultural producers. Agricultural productivity in the country remains low, further exacerbated by inefficient and improper use of production inputs, leading to elevated production costs. Rising trade barriers, particularly those tied to product standardization, consumer safety, and environmental protection, add another layer of complexity, threatening the competitiveness of Thailand's agricultural exports. The situation is further aggravated by a significant deficit in agricultural research, technological advancements, and innovations. This lack of development is compounded

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by inadequate access to up-to-date information and data, which are crucial for informed decision-making by farmers and stakeholders (Harvie, 2014).

The farming population in Thailand is projected to experience a significant decline, particularly among individuals under 65 years of age, with numbers expected to decrease from 18.07 million in 2003 to 16.64 million by 2028, reflecting an approximate 19% reduction over this 25-year period. Notably, the proportion of agricultural workers aged 65 and above exceeds that of younger age cohorts, mirroring trends observed in Japan. A key factor contributing to this aging farming population is the relatively slower rate at which individuals are exiting the profession. In Japan, for example, the number of farmers aged 65 and older has increased, suggesting a growing trend of individuals continuing to engage in farming post-retirement. These post-retirement farmers can be categorized into three distinct groups based on their pension income: those who retire early (ages 50-54), those who retire at the first retirement age (ages 55-59), and those who retire at the second retirement age (ages 60-69) (Sawada, 2003; Supaporn and Tsuneo, 2005). The number of these post-retirement farmers began rising in the 1990s, with a notable increase during 2005-2010. This surge is largely attributed to the post-war "baby boom" generation, born between 1945 and 1949, reaching retirement age (Poungchompu, Tsuneo & Poungchompu, 2012: 103-105). The implications of this demographic shift pose challenges for the sustainability of agricultural labor forces in both Thailand and Japan, signaling the need for adaptive strategies to address the aging farmer population.

Thai agriculture is characterized by its diversity in crops and farming practices, with a significant shift towards modernization and sustainability. However, the sector still grapples with issues of productivity, environmental sustainability, and adaptation to climate change. Young farmers are increasingly recognized as key drivers of innovation in agriculture, bringing new ideas, technologies, and practices to the forefront. Their role is crucial in transitioning Thai agriculture towards more sustainable and efficient models.

A critical demographic for the future of Thailand's agricultural workforce is the "Young Smart Farmers." The Thai government, through the Department of Agricultural Extension under the Ministry of Agriculture and Cooperatives, has made it a priority to nurture this new generation of farmers, aiming to build a strong network at both provincial and national levels. The objective is to drive the future growth of Thailand's agricultural sector by integrating modern technologies and innovative practices into farming, equipping young farmers with the skills and expertise necessary for a sustainable and viable profession. The shift in the national development strategy, moving from a "doing more, getting less" mindset to "doing less, getting more," places a strong emphasis on innovation-driven production. The long-term success of Thailand's agricultural sector depends not only on encouraging new farmers but on actively promoting and supporting their development. To this end, the government seeks to train and equip individuals aged 17 to 45 with the requisite knowledge and skills, providing career opportunities and creating pathways into modern agriculture. Historically, traditional agricultural work in Thailand has focused on subsistence farming, aimed primarily at feeding households, but this model has struggled to generate reliable income. The challenges facing the agricultural workforce—limited access to labor, capital, equipment, and markets—have led to higher production costs and mounting debt. These financial pressures have discouraged many farmers from wanting their children to follow in their footsteps. Instead, families often emphasize the importance of higher education for their children, hoping it will lead to better living standards and opportunities beyond agriculture (National Strategy Secretariat Office, 2018).

This underscores the necessity of developing a new generation of well-equipped farmers who can adapt to the evolving demands of the agricultural industry while ensuring long-term sustainability and prosperity. For Strategic Proposals for a Young Smart Farmer in Thailand future Leverage smart farming technologies, including precision agriculture tools, drones, and IoT devices, to optimize crop yield, reduce waste, and conserve resources. Implement comprehensive educational programs focusing on modern agricultural practices, sustainable farming techniques, and business management to equip young farmers with the necessary skills. Facilitate access to microfinance and grants for young farmers to invest in technology, infrastructure, and education. Develop platforms for farmers to directly sell their produce, reducing intermediaries and increasing profits. Utilize digital marketing to reach wider markets. Encourage the formation of young farmer networks for knowledge sharing, collaboration, and mutual support. (Jansuwan & Zander, 2021) Advocate for policies

that support young farmers, including land use rights, subsidies for sustainable practices, and tax incentives for agri-tech adoption. Promote practices that enhance biodiversity, soil health, and water conservation, ensuring the long-term sustainability of Thai agriculture. By embracing these strategies, young smart farmers in Thailand can revolutionize agriculture, making it more productive, sustainable, and profitable.

For the reasons outlined above, the researcher believes that research is a crucial instrument for learning from stakeholder groups. Stakeholders shared their opinions about previous methods used to train the next generation of farmers. As well as strengthening partnerships with public partners such as the government, business community, academic institutions, and civil society. Develop implementable techniques for educating the upcoming generation of farmers. Be ready for a labour scarcity in the farming industry. Long term, it will also boost the local economy and act as a database for the Thai government's future agriculture policy.

## **Research Objectives**

To Development Strategic Proposals for a Young Smart Farmer for Advancing Agriculture in Thailand

Strategies for implementing plans into action for Young Smart Farmer to Advancing Agriculture in Thailand

## **Research Methods**

This study is qualitative in nature. The investigator intends to gather data about governmental policies. Four-year development plan for Thailand. Develop a plan to train the next Young smart farmers in Thailand notions and paradigms. Marketing, maintaining farms, and developing incentives to become a young Smart farmers. Networking ties with the public and commercial sectors and draw insights from the success elements to develop into a new breed of knowledgeable farmers. Additionally, data on the potential and preparedness of the next farming generations is gathered.

Moreover, the researcher employed triangulation in terms of data gathering techniques to ensure that the data were correct and trustworthy. Involves gathering information on research topics through participant observation, in-depth interviews, individual interviews, group debates, organizing forums, and document study techniques. Here are the specifics

1. Secondary source the research employs the examination of papers pertaining to the examination of current government policies in order to gather data from secondary sources. Thailand has a strategic development plan. Development strategy for the next generation of knowledgeable farmers within the connected agencies group in Thailand.

2. Primary source using the following techniques for gathering data:

2.1 Technique for conducting in-depth Interviews Compile information on the status and problems related to the education of a new breed of astute farmers. Information and understanding of being a new breed of smart farmers. The paradigm and notion that we are a new breed of intelligent farmers networking in plantation management, motivating, and marketing partnerships with both public and private sector organizations challenges that influence agriculture.

2.2 Focused group using an interview schedule to brainstorm Group think using the Appreciation-Influence-Control (AIC) technique to Brainstorming, Mind Mapping, including analysis of strengths and weaknesses within the group and opportunities and limitations of the young Smart farmers. Collect information about current government policies Thailand Group Development Strategy Plan Development plan for the young Smart farmers in Thailand Problems causing agriculture Knowledge and understanding about agriculture

2.3 Observation of non-participants studying the attitudes, behaviours, and interactions of younger and older Young Smart Farmer using a checklist. By breaking down the qualities of interactions into three categories, one can proceed from engaging in joint activities 1. A constructive path 2. Adverse direction, and 3. Indifferent direction from individuals engaging in cooperative tasks

## Important Informant

In this study, 30 individuals were chosen by Purposive Sampling and split into 5 groups in order to obtain data from key informants:

1. Ten younger farmers, ranging in age from 17 to 45, who are knowledgeable and experienced in eight different agricultural fields: 1. agroforestry; 2. mixed agriculture; 3. mixed farming; 4. shifting cultivation; 5. natural agriculture; and 6. agriculture. Novel theory 7. Fine farming; 8. Organic farming, etc.
2. Government organizations, employing six individuals, play a part in educating and training the upcoming generation of astute farmers. advertising and marketing building, processing, composting, and soil conditioning networks Set aside spaces for planting Throughout Thailand, which includes, training programmes for the next generation of farmers, pest control, inspection of agricultural production standards, and monitoring and evaluation of those farmers are all provided.
3. The four members of the private sector are crucial in advancing marketing, promoting, and examining manufacturing standards. In addition to offering education to the upcoming Young Smart farmer, the Chamber of Commerce in the provinces of Thailand.
4. A training area and a network of eight nascent farmers with knowledge and comprehension. Study trips aimed at the next Young Smart farmer In addition to encouraging the establishment of networks for agricultural learning, such the Green Agriculture Network. Network of agriculture for producing safe veggies Thailand's network of young farmers and local thinkers.
5. Two political party members researching their respective parties' ideas for the training of the next generation of farmers in Thailand. In addition, they offer opinions and recommendations for creating plans for future generations of agriculture.

## RESULTS

The 20-year national strategy, which serves as the overall framework for national growth, is therefore considered while creating the next generation of intelligent farmers. Thailand's 4.0 framework aims to transform the nation into a stable, prosperous, and knowledge-driven economy by transforming the country's economic structure and removing obstacles with cutting-edge technology, knowledge, and innovation. Continue to advance in all areas to halt the nation's progress. (Tiantong, Limwattanayingyong, Wibulpolprasert, Vedrasco & Kertesz, 2019) All sectors, particularly the private sector and entrepreneurs, must work together to drive the economy in this day and age. Local neighborhood to achieve Thailand 4.0 that has to be supported. It is imperative to modify the current structure of the Thai economy to achieve more equilibrium. There is a clear strategy and direction for the future. By using a new national driving mechanism that prioritizes strengthening the nation from within, Thailand's economy will become more adaptable. Able to withstand the impact of outside changes As a result, the government highlights how crucial it is to raise the next generation of skilled individuals known as clever Young Smart farmers. Proficiency in using technology in agriculture with creativity and capacity to create efficient agricultural goods over the long run. (Chairaksa & Pankham, 2023)

However previous attempts to promote the growth of Young Smart farmers have not yielded the expected results. This is because it stems from four operational issues: the first is the analysis of Young Smart farmers' preparedness; the second is the issue of low stakeholder involvement. Third, the issue of actually implementing the plan. The fourth issue is how to keep an eye on and assess the plan. Specifically, policies still can't keep up with the difficulties and make them competitive globally when put into reality. (Patel & Sharma, 2022) Furthermore, no explicit strategic plan exists. Must get ready for the creation of food security later on. Also encouraging the creation of jobs Provide jobs for farmers in the rural sector, which entails distributing revenue to nearby communities and making vacant space even more beneficial.

### Development Strategic Proposals for a Young Smart Farmer for Advancing Agriculture in Thailand

According to this data, developing a clear strategic plan for the raising of future generations of farmers would lead to driving efficiency and clarity both now and in the future. The investigator arranged a forum for

brainstorming among interested parties. (Nhamo & Chikoye, 2017) The political party representatives make up. Commissioner of Agriculture; Agricultural Scholar Folk philosopher and scholar in agriculture a strategy plan for growing new generation farmers has been developed by 20 new farmers and a representative of the private sector. It will be utilised as a tool for direction setting. To meet the problems of the twenty-first century, the objective is to turn the agricultural sector into a high-tech industry founded on outlizedically friendly agricultural concepts. The article is titled "Strategic Plan for the Development of Young Smart Farmer" and is broken down into the following categories: strengths, weaknesses, opportunities, and threats.

1. Strengths: The young Smart farmers is viewed as knowledgeable, skilled, and capable of using precision agricultural technologies to boost output while lowering environmental effects. In addition to overseeing diverse agricultural domains including soilless and vertical farming. To deal with space constraints In addition, organic and sustainable farming is a priority. To preserve soil quality and biodiversity considering the effects on the economy, ecology, and society. Online media may also be used to market agricultural goods. In addition, information exchange is done with those who want to know more about themselves. One can categorize strong points as follows:

**Table 1 Strengths**

quantity	Strengths
1	To make better judgments, the younger generation of smart farmers is utilizing drones, precision agricultural technologies, and data analysis.
2	The younger generation of smart farmers is well-versed in business management and agricultural science.
3	Young, astute farmers can adjust to shifts in governmental regulations. financial issues The values of society and effectively addressing climate change
4	The younger generation of Smart Farmers has ties to the neighborhood. Possesses a broad clientele and the ability to collaborate effectively with network partners in the public, commercial, academic, and civil society sectors.

2. Weaknesses: Despite the potential of younger farmers to innovate and develop agriculture that satisfies demands for sustainability. However, there are still shortcomings with relation to land matters. The government's policies and the money that support them are not clear and consistent. Consequently, it may hinder the current and future growth of farming generations. The following categories apply to weak points:

**Table 2 Weaknesses**

quantity	Weaknesses
1	The majority of young farmers do not have access to modern technologies, land, or assets. Therefore, it is not feasible to spread the results across a big region.
2	Because they still don't know how to use agricultural wisdom to their advantage, some farmers of the younger generation still lack the knowledge and abilities to manage agricultural plots, just like the farmers of their parents and grandparents.
3	Many farmers from the younger generation find it difficult to get marketing channels, which prevents them from being able to drive constantly.

3. Opportunities: Using techniques like artificial intelligence, the younger generation of farmers is transforming Thailand's agriculture industry for the better. Productivity efficiency is increased by IoT technology development. Agricultural policies that are ecologically friendly have also resulted from increased understanding of sustainable development. Climate change-adaptive agriculture Thus, in order to assist, encourage, and support more new generations of farmers, there are organisations within the government, the commercial sector, academia, and civil society. In order for farmers to live better lives. Opportunities fall into the following categories:

**Table 3 Opportunities**

quantity	Opportunities
1	The growing knowledge of ecologically friendly farming The younger generation is now more interested in farming as a result of eating more organic crops. As well as the advancement of technologies to support agriculture.
2	Agricultural technology is always evolving, with the potential to improve productivity. Agrarian crops' productivity and sustainability It influences the present and future growth of a new generation of astute farmers.
3	Assistance from NGOs and the government in giving funds to young farmers who show interest. In addition to loans for agriculture For new farmers, there's also a free training course. Consequently, younger generations are drawn to a career in agriculture.
4	Possessing a neighborhoods market that exclusively purchases secure farm goods. The development of a green market network, together with organic agriculture, is being promoted by the province's hotel and restaurant industries, Big C Department Store, Robinson Department Store, and Lotus Department Store. To give farmers that specialize in organic farming a place to market their produce.

4. Threats: The agricultural industry confronts challenges from the next generation of astute farmers, including climate change. Major agribusinesses as well as market demand and economic uncertainties. Young farmers also have to contend with this competition. Has the ability to influence marketing and uses cutting-edge, contemporary technology, which has an impact on the next generation of farmers. Obstacles fall into the following categories.

**Table 4 Threats**

quantity	Threats
1	Profitability may be impacted by uncertainty in production costs and output prices.
2	Modifications to financial assistance for agriculture or a comprehensive strategy for the training of future generations of farmers
3	Obstacles posed by major agribusiness companies and global marketplaces
4	A higher danger of natural disasters and unpredictable weather, which has an impact on how younger farmers cultivate crops.

With regard to methods for producing future generations of farmers Information from the stakeholder group's brainstorming stage was used by the author. Stakeholders are grouped in order to facilitate the creation of development initiatives, such as instruction and training. Innovation and Technology financial assistance Establishing connections with network partners upholding the following policies and a sustainable environment:

**Table 5 Development Strategic**

quantity	Development Strategic
1	Provide a thorough, short-term agricultural training that lasts four months for theory and six months for practice to enable astute young farmers to acquire contemporary farming methods. Sustainable business practices and farming expertise Collaborating with academic establishments such as universities, community colleges, vocational schools, and the College of Agricultural Technology, among others, is crucial in shaping the future of agriculture.
2	Advance innovation and technology Encourage the access of younger farmers to contemporary technologies. Must be utilized in farming at a reasonable and cost-effective price in order to boost productivity, save more time, and enhance efficiency. In addition to giving guidance to next farming generations, the help funding agricultural company growth. In order to further expand the agriculture industry
3	Give younger farmers financial assistance so they may obtain cash at the early blossoming period. And low-interest loans to assist newly established farmers in buying seeds, equipment, and land.
4	Establish a nationwide and local farmer's network. To link different marketing channels and share knowledge, expertise, and experiences.
5	Maintaining a sustainable ecosystem Encourage and assist the next generation of farmers to engage in ecologically responsible farming practices, such as regenerative agriculture. To establish a healthy ecology, use biological agricultural sector, organic agriculture, etc. Boost the variety of life
6	Funds for farmer pension and land welfare. Unused state property ought to be brought by the government. Given to next generations of farmers who have an interest in farming. In addition to providing welfare for farmers' pension funds in order to establish stability for farmers going forward.

**2. Strategies for implementing plans into action for Young Smart Farmer to Advancing Agriculture in Thailand**

For creating strategic plans aimed at producing a new breed of knowledgeable farmers that are drawn from stakeholders. Political party representatives make up. Commissioner of Agriculture Academic agriculture Folk philosopher and scholar in agriculture A representative of the private sector and twenty new generations of farmers. Consequently, producing results in both quantity and quality combined will result in upgrading the Young Smart farmers to have a steady income by raising the Young Smart farmers. (Elinder & Colombo, 2023) In addition to ensuring global food security over the long run four methods are required to implement the plan. The three main goals are to: (1) construct a farmer and agribusiness development institution; (2) establish a local community agricultural product buying centre; and (3) design a three-year program that will guide successful new farmers who possess intelligence. Establishing land welfare is the fourth step. The National Farmers Pension Fund and loans here are the specifics.

Build an institute for the development of farmers and agribusiness first. Situated within the Office of Provincial Agriculture. The Ministry of Agriculture and Cooperatives is in charge of it. The Agribusiness Development Institute and Farmers It will produce a novel kind of innovation with autonomous labour and adaptable management. (Junaidi, Yulius, Rosana & Manullang, 2021). You are nonetheless accountable for your job even though you are not subject to government restrictions. In order to increase productivity and results, this entails decreasing control over inputs and processes. Give integrated work your whole attention. Boost collaboration

between the public and commercial sectors, as well as between academics, civic society, and the government, to effectively address the intricate issues facing the agriculture industry. The establishment of this kind of institution was determined to be necessary due to the abundance of agricultural tasks. (Kaundal, Vyas & Singh, 2022) However, there are variations in traits and methods of application. Distinct portions of work Farmers should find it difficult to obtain government services. It took a while to not only solve the issue but also to stay up with the farmers' struggles. In order to have a sustainable income, the agricultural sector must be reformed and the agricultural structure adjusted to suit. Decentralisation across the board or in accordance with local conditions circumstances in an agricultural area to establish a centre on agriculture comprising researchers, scholars, and specialists from government organisations. Institutions of higher learning, the private sector, and civic society Enter to offer assistance, advocacy, counsel, and support. Address issues for farmers and advance the agriculture industry simultaneously.

An agricultural clinic will operate under the Institute of Farmer Development and Agribusiness, with the objective of promptly, affordably, and conveniently meeting farmers' demands for production inputs and information. It also lowers the cost of production for farmers and the amount of chemicals used in agriculture. Agricultural Clinic will bring together scholars from different fields to collaborate. (Brahma & Tripathi, 2020) Giving farmer's advice on informational matters related to agriculture, such as production, marketing, product processing, packaging, etc. They also help farmers under the name Agri-Doctors. Diagnosis at no cost via examining plant samples that farmers brought in for examination that were impacted. and offer guidance and problem-solving techniques By placing orders for medications to cure plant illnesses or by conducting agricultural transactions with specialists in the management of plant illnesses and pests—also referred to as agricultural pharmacists—who will handle the production elements. Agricultural physicians, who furnish information on farmers seeking assistance from agricultural clinics, issue orders for the production of agricultural, marketing, and packaging-related products. Will be gathered for study. To serve as information and facilitate the dissemination of knowledge to farmers for other applications. Farmers themselves may read and apply the knowledge that is produced at the same time

1. "A health centre for crops and agribusiness" is the slogan of the agricultural clinic, which is part of the Institute of Farmer Development and Agribusiness. There will be twelve employees within the organisational framework, chosen by departments. Groups that aid in the development of farmers and the promotion of agriculture Operating a farm enterprise four sectors are considered for the development of agricultural commodities and products: academia, the business sector, the government sector, and the civil society sector. The last group includes:

1.1 Public sector: Five employees were chosen from among government departments, such as the Provincial Agriculture Office. Agricultural Cooperative Office Community Development Office for Provincial Commerce the Farmers Rehabilitation and Development Fund's Provincial Industry Office, etc.

1.2 Academic department: three individuals chosen from universities and community colleges, among other educational institutions. Five persons at Agricultural College School

1.3 Two private sector employees chosen from among entrepreneurs. Representatives from the private sector include the Province Chamber of Commerce. Provincial department store executive hotel manager provincial eateries, retailers, etc.

1.4 civil society sector: Two individuals chosen from among local farmer organisations, associations, foundations, networks of philosophers, and other civil society organisations.

The province's governor issued an order directing all 12 individuals to report for duty. Fulfil official responsibilities by advising farmers at the agricultural clinic. Which is regarded as a component of that organization's government service. Those who have finished a postgraduate degree in any of the agriculturally linked fields—field crops, horticulture, plant protection, etc.—are qualified. Sericulture, agronomy, and seed technology Chemical propagation Science Fisheries Community development via science, marketing, development, and packaging Extension in Agriculture, etc. Twelve employees are capable of carrying out simple diagnostics, offering farmers advice on information and inputs, and organising marketing support. Creation of agricultural goods and products based on training and professional and research-related experience. Every

employee will take turns helping farmers from 10:00 a.m. to 7:00 p.m. in accordance with the predetermined timetable. Everyone will have shared duties and roles.

2. The agricultural clinic's responsibilities twelve employees rotate among the tasks performed by the Agricultural Clinic. It will carry out two tasks in order to advise farmers.

Academics that specialise in agriculture or agricultural physicians, or "Agri-Doctors," will be on hand to offer guidance in Part 1. Free diagnosis and techniques for resolving issues with farmers In addition to sending academics farmers' issues with plant disease management or agricultural business.

Academics that specialise in treating plant diseases will be featured in Part 2. Resolving the chemical contamination issue examining requirements for agricultural products operating a farm enterprise Agri-Pharmacy is the development of commodities and products. When it comes to using biological materials, for example, they carry out their tasks in accordance with the advice of agricultural academics or agricultural physicians, or "Agri-Doctors." supplying pesticides, plant disease treatments, and product standards for inspection. Development of products and their attributes Putting together arranging for farmers to trade agricultural products, etc. There will be items and merchandise in the clinic. Sold for less to farmers than to the general public. There are no chemical pollutants, and scientific laboratories have produced all kinds of biological goods. It is safe for use in organic farming by farmers. Personnel with specialised knowledge and skills will also be developing packaging-related equipment at the same time. To fulfil the demands of consumers and farmers in the future. Together with having the ability to actually compete in the market.

3. Offering online services for agricultural clinics through WhatAPP is a smartphone communication app. The agricultural clinic will be responsible for creating an application. was established to help farmers who are unable to go to agricultural clinics to receive guidance. Alternatively on days and hours between 10:00 a.m. and 7:00 p.m., you can phone in to obtain advisory services. On the days and hours indicated, there will be police and staff who are qualified to deliver services. For submissions WhatAPP whenever you want. The application will diagnose issues related to agriculture, such as pests, plant diseases, and soil conditions. Planning for planting Crop fields: managing water resources Production guidelines Development of products and their attributes establishing marketing routes in addition to looking at agricultural commodity pricing. Through the application channel, farmers would get knowledge. Young smart farmer is able to use information to precisely and accurately tackle certain challenges. Whether its bugs, plant illnesses, or nutritional deficits pH issues it is alkaline water suitable for a variety of plant growth. Modifying the soil's properties to the plants' needs, etc. Consequently, applying technology to resolve issues in agriculture. In addition to having an extensive repository of agricultural information.

Secondly, to address long-term issues in the agriculture sector, establish a hub for local people to purchase agricultural goods. An equitable distribution of revenue is required. Establishing a hub for local farmers or the next generation of farmers who are prepared to purchase agricultural goods is essential, particularly in the rural areas. Possess the ability to start their own business and are in charge of buying goods from neighbourhood farmers and serving as a "Distribution Centre from Growers to Consumers" by buying goods to resell at reasonable rates in accordance with market forces. Both purchasing and consignment forms will be available. The agreement amongst the community agricultural product procurement centres will determine this. Nearby with farms To be purchased, goods must satisfy safe agricultural quality criteria as well as organic standards. These standards are necessary to send the items to contemporary trade marketplaces like Tesco Lotus, Big C, and Makro, as well as markets that collaborate in buying products from farmers. Large wholesale marketplaces such as the Thai Market, and unique markets such as selling items in wholesale form in partnership with corporations, hotels, and restaurants that acquire agricultural products. Delivering goods and items to the place of purchase requires selection, cutting, packaging, and delivery. To provide customers all around the nation with standardized, fresh, hygienic, and high-quality products. This serves as a hub for buying locally produced agricultural goods. The Farmer and Agribusiness Development Institute oversees the localities. Staff will be available at every stage to assist with recommendations, guidance, and follow-up. To function effectively.

Third, develop a three-year curriculum to prepare astute young farmers for success. The Agribusiness Development Institute and Farmers to succeed over a three-year period, a curriculum for the development of



future generations of farmers must be created. The researcher refers to it as a "three-year path to success," with Year 1 being the creation of knowledge and the development of farmers, Year 2 being the development and upgrading of farmers, and so on. Modernising and growing their commercial farms here are the specifics.

First year: Educate and train farmers the focus is on developing a solid knowledge base for integrated farming, which includes thinking systems practice. Incentives for agriculture Management of farmland and farm organisation soil preparation Management of water systems controlling pests and plant diseases and asking for production requirements Analysis of a business strategy using a business model canvas Development of marketing channels processing products and commodities become a lecturer to educate others who are curious. The initiative is dubbed "Creating Knowledge and Developing Farmers" because, in the first year, any participating farmers who have potential or competence may grow together.

Year 2: Farmers' advancement and development the application of theoretical knowledge to real-world situations is emphasised. By producing a new breed of knowledgeable young smart farmers who, after a year of intensive training, can write a business plan, suggest a budget for safe agricultural plots and organic farming under 50,000 baht per person, and set up marketing channels. Shopping centre Create goods that will be distributed to customers at different establishments, such as lodging facilities, dining establishments, and neighbourhood shopping centres that fall under the project's purview. To attract customer demand, agricultural products need to be packaged with quality and consistency. It is known as "developing and upgrading farmers" because every kind of agricultural product that is supplied to nearby community agricultural product purchasing centres needs to fulfil production requirements at the level of safe agriculture and organic agriculture in the second year.

Third, improving and growing the number of commercial farmers. Its main goal is to produce young smart farmers who are capable of becoming entrepreneurs and who has expertise in both theory and practice. In addition to providing instruction and expertise as a lecturer. It is a resource for knowledge. And research the public and private sector tour locations. It serves as a hub for buying local farm products and has the authority to make budget requests to reach out to 50 interested farmers in order to increase expertise. There will be a committee from the Institute of Farmer Development and Agribusiness, which was established via collaboration between four sectors: academics, the private sector, the government, and civil society. The programme is termed "Upgrading and Expanding Commercial Farmers" because it monitors, assesses, and makes suggestions regarding the work of farmers who apply for a knowledge expansion budget in Year 3.

Establish land welfare as the fourth step. The National Farmers Pension Fund and loans the government will establish the organisations, processes, and procedures in charge of really fostering the growth of the upcoming Young smart farmer. Having the ability to draw in the younger generation with concepts Ideology is making its way into the agriculture industry more and more. By setting up a land welfare system Fair credit availability and farmer pension funds available to support creating the groundwork for future improvements to farmers' standard of living while also encouraging the next generation to pursue careers in agriculture. Here are the specifics.

1. Young smart farmers receiving land aid from the Agricultural Land Reform Office. Giving future generations of farmers who lack land or who require land for farming access to it for farming purposes. It might take the shape of a sales contract with the government or a leasing agreement. Under the requirement that next generation farmers have a committee to watch them and have been in the field for at least five years. Analyse farming outcomes every six months to gauge interest in the industry. The government will offer the land for sale at a reduced price if the assessment is approved. Farmers' rights in the relevant area they are not allowed to trade with anybody else for a whole five years. At the local level, granting land to next Young smart farmer who are interested in farming is seen as a way to address issues of social inequality and foster employment and career opportunities. Additionally, it is a useful use of the government's idle land. It is said to be the setup of a framework and process for producing future generations of successors to the farming profession.

2. Giving six state banks—Government Housing Bank, Government Savings Bank, Bank for Agriculture, and Agricultural Cooperatives—equitable lending benefits for aspiring farmers Farmers can apply for loans from the Export-Import Bank of Thailand, the Islamic Bank of Thailand, and the Small and Medium Enterprise

Development Bank of Thailand. Assistance with costs or investments related to agricultural jobs or investments in agricultural advances is welfare. To transition to contemporary farming per individual, the maximum loan amount is limited to one million baht. Young smart farmer who wish to apply for financing must meet the following requirements: 1. be a farmer from Young smart farmer who has completed training from the Young Smart Farmer and obtained a certificate from the province's Agriculture Office. 2. The age range is 17–45 years. New farmers, however, who are under 20 years old, need to have two or more guarantors. 3. Possess a well-written company strategy. To demonstrate the capacity for agriculture 4. Having reasonable loan advantages for Young smart farmer would encourage additional upcoming generations to enter the agriculture business since they will be customers of that bank. Since there is a purpose for encouragement, assistance, and advocacy about access to just sources of loans. They have the ability to grow their family's agricultural enterprise.

3. The National Farmers Pension Fund Farmers are unsteady workers whose jobs have long been in jeopardy. Parents and guardians frequently discourage their children and grandkids from becoming farmers since there is inadequate welfare. Young smart farmer of individuals interested in agriculture has seen a significant rise in awareness with the creation of Young Smart Farmer policy. ascend and pose inquiries to contest conventional agricultural methods By trying to find a way Agriculture is using more and more modern tools, such internet sales. Establishing guidelines for agriculture, product processing, etc. A large number of Young smart farmer are becoming farming entrepreneurs. There is no denying that the policy for the development of Young smart farmer has drawn in fresh viewpoints. How to conceptualise creative or contemporary agriculture until a large number of individuals achieve success

Therefore, welfare with the following tenets, requirements, and savings strategies, the "National Farmers Pension Fund" represents a significant new avenue for improving the long-term quality of life for the upcoming Young Smart Farmer beyond the age of sixty.

1. Principle: In line with Section 11 (8) of the National Farmers Council Act of 2010, district representatives of the National Farmers Council shall carry out their responsibilities to support and build farmer and farmer organisation capacities. Its responsibility is to encourage farmers to engage in analytical thought, identify problems, create strategies, and resolve a range of issues and demands, as well as to advance their careers and address issues that arise. Make a proposal to the Cabinet on measures that would strengthen and support farmers. Regarding the National Farmers Pension Fund Because the Office of the National Farmers Council is in charge of them, National Farmers Council representatives in each district are required to take action to foster understanding. Encourage farmers to recognise the long-term worth and advantages of the "National Farmers Pension Fund," a fund that offers them stability for the future.

2. Membership in the National Farmers is a requirement for eligibility to the National Farmers Pension Fund. Between the ages of 18 and 60, be employed as farmers, and possess a National Farmer Membership Book. Not holding a Government Pension Fund membership not part of a fund set up for providence, etc.

3. Benefits received from the National Farmers Pension Fund Farmers who apply for membership will get one of two distributions: 1. Gratuity: Upon turning 60, farmers who have deposited money into the fund for fewer than 20 years will be eligible for a gratuity. 2. Pension: Farmers who contribute funds to the fund. A lifetime pension will be given to anyone over 20. Here are the specifics.

3.1 Giving out gratuities Farmers will get an equivalent amount if they deposit 500–1000 baht each month. For instance, the government will also get a 500 baht contribution if a farmer deposits 500 baht with the National Farmers Pension Fund. If a 20-year-old farmer puts in 500 Baht every month for a year. A 3,000 baht deposit will be made, along with a 6,000 baht deposit from the farmer, and the deposit period will be 40 years. The farmer will have a deposit of 240,000 baht if he deposits money until he is 60 years old. Using the following calculation, the farmer will also have a gratuity amount of 480,000 baht:  $Ratsombat = \text{deposit amount} \times 12 \text{ months} \times \text{deposit term}$

3.2 Pension Provision The government would provide farmers who deposit 500–1000 baht a month equal compensation. They will get a pension equal to three times their deposit amount when they turn sixty. For instance, farmers will get a monthly payment at reaching 60 years of age if they invest 1,000 baht each month.

3,000 Baht perpetually. Your whole estate will be paid out as a pension to your heirs if you pass away before turning 65. In order to guarantee residents' security in life, the National Farmers Pension Fund will pay payments in accordance with welfare state principles. Along with lowering the danger of long-term employment and drawing younger generations into the agricultural industry, other goals include raising the standard of living for farmers so they may eat well, live well, and be happy.

## **DISCUSS**

The goal of sustainable development is to satisfy current demands without endangering the capacity of future generations to satisfy their own. A crucial part of this is establishing food security, which is the guarantee that everyone, everywhere, has physical, social, and financial access to enough, secure, and nourishing food that satisfies their dietary needs and food choices for an active and healthy life. (Mohammed, Gafa & Atanga, 2023) The intersection of sustainable development and food security involves promoting agricultural practices that are environmentally friendly, economically viable, and socially equitable. This includes adopting methods such as agroecology, precision farming, and organic agriculture to increase productivity while preserving natural resources. It also involves reducing food waste, improving supply chain efficiencies, and enhancing food distribution networks to ensure that food reaches those in need. (Pérez-Escamilla, 2017) In this context, addressing climate change is essential because it presents serious concerns to food security and agricultural output. It is crucial to make efforts to lessen greenhouse gas emissions from the food industry and to strengthen food systems' resistance to extremes linked to climate change. (Viana, Freire, Abrantes, Rocha & Pereira, 2022)

The solution to upcoming food shortages and the maintenance of global food security lies in training the next generation of farmers. To recruit and keep young people in agriculture, a complex strategy involving education, technology, and legislative assistance is needed. Growing food may be made more sustainable and enticing for young people by introducing them to cutting-edge farming methods like hydroponics, vertical farming, and precision agriculture. These innovations make farming a desirable and feasible career option by preserving resources while simultaneously increasing productivity. (Pujiati, Nihayah & Setiyani, 2016) To equip aspiring farmers with the information and abilities necessary to meet the demands of contemporary agriculture, education is essential. This entails being aware of the effects of climate change, sustainable agricultural methods, and farming's commercial components. Agribusiness degrees, practical workshops, and vocational training programmes may provide young farmers with the resources they need to succeed. (Olanrewaju, Oyatomi, Babalola, & Abberton, 2022)

Support from policymakers is also necessary to give young farmers access to markets, finance, and land. To reduce the entrance barriers for new farmers, governments and organizations might provide loans, grants, and subsidies. Furthermore, establishing forums for the mentoring and sharing of expertise between seasoned and novice farmers may promote creativity and a sense of community. A well-defined development plan is necessary in order to formulate strategic recommendations for training Thailand's next generation of farmers. To assist with future labor shortages and the resolution of the food security issue.

Developing a young smart farmer of successful farmers is vital for the sustainability of global food systems. This endeavor involves not just attracting young people to agriculture, but also equipping them with the tools, knowledge, and resources they need to thrive. Emphasizing the integration of technology and sustainable practices is key. Innovative farming techniques, such as precision agriculture, vertical farming, and the use of drones and AI for crop management, can make farming more efficient, environmentally friendly, and appealing to a tech-savvy generation.

Education and training play a crucial role in preparing these future farmers. Tailored programs that combine practical experience with knowledge about modern agricultural practices, business management, and environmental sustainability are essential. This education should be accessible and engaging, offering pathways for young people from diverse backgrounds.

Policy support and financial incentives are equally important. Access to land, capital, and markets can be facilitated through grants, loans, and subsidies, lowering the barriers for entry into farming. Mentorship

programs that connect experienced farmers with newcomers can foster knowledge exchange and community support, crucial for the success and innovation in the sector.

It is necessary to alter public attitudes of agriculture in order to promote farming as a viable and fulfilling career option. Emphasizing the significance of farmers in tackling worldwide issues like food security and climate change may instill a feeling of mission and commitment in the upcoming generation.

## REFERENCES

- Brahma, M., & S. Tripathi, S. (2020). Indian Society of Agribusiness Professionals: Helping Agripreneurs Innovate. *Emerging Economies Cases Journal*, 2(1), 15-23.
- Chairaksa, N., & Pankham, S. (2023). Modern Entrepreneur for the Success of Online Businesses for Small and Medium Enterprise in Thailand. *TEM Journal*, 12(2).
- Elinder, L. S., & Colombo, P. E. (2023). Ensuring food security through meal optimization. *IEEE Technology and Society Magazine*, 42(2), 38-41.
- Harvie, A. (2014). *Food security: Challenges, role of biotechnologies and implications for developing countries*. Nova Science Publishers Incorporated.
- Jansuwan, P., & Zander, K. K. (2021). Getting young people to farm: how effective is Thailand's young smart farmer programme?. *Sustainability*, 13(21), 11611.
- Junaidi, Y., Yulius, Y., Rosana, E., & Manullang, O. F. (2021). Farmer institutional dynamics in vegetable agribusiness development efforts in kelurahan talang keramat, Banyuwasin District. *Jurnal Lahan Suboptimal: Journal of Suboptimal Lands*, 10(2), 178-186.
- Kaundal, B., Vyas, S., & Singh, S. (2022). Enhancing Income of Farmers Through Agribusiness Entrepreneurship. *AMC Indian Journal of Entrepreneurship*, 5(1), 39-55.
- Liao, X., Nguyen, T. P. L., & Sasaki, N. (2022). Use of the knowledge, attitude, and practice (KAP) model to examine sustainable agriculture in Thailand. *Regional Sustainability*, 3(1), 41-52.
- National Strategy Secretariat Office. (2018). *National Strategy 2018–2037 (Summary)*.
- Nhamo, N., & Chikoye, D. (2017). Models supporting the engagement of the youth in smart agricultural enterprises. In *Smart Technologies for Sustainable Smallholder Agriculture* (pp. 211-232). Academic Press.
- Patel, S., & Sharma, O. P. (2022). Knowledge of Young Farmers about Climate Smart Agricultural Intervention. *International Journal of Environment and Climate Change*, 12(11), 658-665.
- Poungchompu, S., Tsuneo, K., & Poungchompu, P. (2012). Aspects of the aging farming population and food security in agriculture for Thailand and Japan. *International Journal of Environmental and Rural Development*, 3(1), 102-107.
- Tiantong, S., Limwattanayingyong, A., Wibulpolprasert, S., Vedrasco, L., & Kertesz, D. (2019). Towards optimal collaboration: reforming the WHO country cooperation strategy in Thailand. *Bulletin of the World Health Organization*, 97(9), 642.
- Wani, S. P., Pathak, P., & Sahrawat, K. L. (2012). *Community watershed management for sustainable intensification in Northeast Thailand*. International Crops Research Institute for the Semi-Arid Tropics.