

Design Model for Empowering Partner Farmers of PT SBI through Design Thinking Approach and Triple Layered BMC

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Abstract. *The purpose of this study is to design an empowerment model for shallot farmers who are partners of PT SBI in Brebes Regency to improve their welfare through a mentoring unit as part of PT SBI. The empowerment model was designed using a design thinking approach. First, an Empathy process was conducted through interviews with farmer representatives and a Focus Group Discussion with PT SBI management to map stakeholders and identify the problems. In the Define process, the main problems were concluded: farmer's capital, standardization of shallot production and market development. The idea process was carried out using the Triple-Layered Business Model Canvas (TLBMC) to design a mentoring unit model on the economic, social, and environmental layers. The result of this study is a prototype of the shallot farmer empowerment model through a mentoring unit at PT SBI.*

Keywords: *Empowerment models; farmers; shallots; design thinking; TLBMC*

Abstrak. *Pada penelitian ini, dirancang model pemberdayaan petani bawang merah mitra PT SBI di Kabupaten Brebes untuk meningkatkan kesejahteraannya melalui sebuah unit pendampingan sebagai bagian dari PT SBI. Model pemberdayaan tersebut didesain dengan pendekatan design thinking. Pertama, dilakukan proses empati dengan wawancara kepada perwakilan petani dan Focus Group Discussion bersama manajemen PT SBI untuk memetakan para stakeholder dan menggali permasalahan yang dihadapi. Pada proses definisi masalah, disimpulkan tiga masalah utama adalah permodalan petani, standardisasi produksi bawang merah, dan pengembangan pasar. Kemudian dilakukan proses ideasi solusi menggunakan Triple Layered Business Model Canvas (TLBMC) untuk merancang model unit pendampingan pada lapisan ekonomi, sosial, dan lingkungan. Hasil dari penelitian ini yaitu prototipe model pemberdayaan petani bawang merah melalui unit pendampingan PT SBI.*

Kata kunci: *Model pemberdayaan; petani; bawang merah; design thinking; TLBMC*

Introduction

Shallot is one of the horticultural crops that often experiences price fluctuations in the market, this is due to the gap in production and consumption. Data from the Ministry of Agriculture (2017) shows that there is a gap in the production and consumption of fresh shallots. The gap reached 29.47%, causing over supply and prices far below production costs, hurting shallot farmers in Brebes. Downstreaming is needed to deal with the characteristics of shallot products that are perishable, seasonal, and have inconsistent cropping patterns (Kustiari, 2017; Parmawati et al., 2021).

PT Sinergi Brebes Innovative (SBI) produces processed downstream shallots as a solution to this concern. Initially, PT SBI was a farmer corporatization formed from the Sido Makmur farmer group association. Then, PT SBI implemented farmer corporatization in the form of a Farmer-Owned Enterprise (BUMP) and was established in 2018 in Sidamulya Village, Wanasari District, Brebes Regency, which is the largest shallot-producing village and sub-district in Brebes Regency. PT SBI produces processed shallot products such as pasta, crispy onions and fried onions.

Even though PT SBI has produced downstream shallot products, there are still a number of problems that need to be addressed so that the future of shallot farmers and PT SBI remains sustainable. These problems include farmers' sources of capital, production quality standards that have not been met, and limited market access. In order to overcome this problem, researchers formulated the establishment of a mentoring unit under PT SBI to address issues of capital, production quality standards, and market access using a design thinking approach and the Triple-Layered Business Model Canvas (TLBMC). According to Lockwood (2009), design thinking is essential with humans as the center of the innovation process which emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping and business analysis, which are very influential on innovation and business strategy.

Literature Review

Design Thinking (DT)

Design Thinking (DT) is a design-based approach to solve problems (Johansson-Skoldberg et al., 2013). DT uses all the designer's sensory abilities to match user needs with available technology and business strategies to convert the values upheld by customers into market opportunities (Brown, 2008). DT is used to implement solutive efforts for the anxiety felt by the community (Putri et al., 2022). According to the Hasso Plattner Institute of Design at Stanford University (2015), in general, design thinking consists of 5 stages, namely empathy, define, ideate, prototype, test. The most important stage in the human-centered design process is the empathy stage to understand the problem from the user's point of view, through observing user behavior and interviewing to gather information.

In the Ideate stage, designers create solution ideas for users, for example by brainstorming, mapping or sketching to generate new ideas. At the Prototype stage, the designer communicates these ideas into a form that can be interacted with the user, so that they can immediately know how the user responds at a lower cost, until a model that is close to the best solution is obtained. The final stage is Test, which is testing prototypes to refine the design based on user feedback. One of the uniqueness of DT is the process iteration until the best design is obtained.

Many companies apply DT to design their product and service innovations, but the application of DT in the agricultural sector is still limited. Kenny et al. (2021) used DT to develop a geotagged photo application as an agricultural monitoring system in Ireland. This study shows that designers can design systems that involve multiple stakeholders for Responsible Research Innovation (RRI) in agriculture.

Triple-Layered Business Model Canvas (TLBMC)

Triple Layered Business Model Canvas (TLBMC) is a practical tool for coherently integrating economic, environmental, and social issues into an organization's overall business model (Joyce and Paquin 2016). As a tool, TLBMC connects business model innovation (Zott et al., 2011; Spieth et al., 2014) and development of sustainable business models (Boons and Lüdeke-Freund, 2013) to support individuals and organizations in seeking competition creatively and holistically. According to Joyce (2016), through personal consultations, organizational and university workshops, TLBMC helps users quickly visualize and communicate existing business models, make explicit data and information gaps, and creatively explore potential business model innovations that are more explicit and oriented towards sustainability. As a layered business model canvas, TLBMC offers a clear and

relatively easy way to visualize and discuss the impact of multiple business models. Instead of trying to reduce various types of values in a single canvas, TLBMC allows economic, environmental and social values to be explored within their respective layers and relate to each other, as demonstrated in research by García-Muiña et al. (2020) and Utari (2023). This certainly supports richer discussion and more creative exploration of sustainability-oriented innovation as a way to explore how decisions on one aspect of an organization can affect other parts of the organization.

Review of Previous Researches on Farmer Empowerment in Brebes

Everyone hopes to live in prosperity, as well as the hopes of the farmers. Empowering farmers is one of the efforts to increase their income and welfare. Empowerment activities that can be carried out are through routine self-help meetings and mutual cooperation, capital, provision of shallot production facilities, as well as the support and role of stakeholders. This empowerment needs to be supported by the provision of production facilities by the government, vegetable commodities as support, training, and comparative studies. However, it is also necessary to pay attention to the inhibiting factors, including reduced land area and imperfect farming systems (Harahap et al., 2023).

One solution to maximize the potential and existing resources is the Student Creativity Program in Community Service (PKM-PM). This program is expected to add economic value that can improve the welfare of farmers. Another hope is that there will be progress from farmers in terms of creativity and dispelling concerns about the price of onions that may drop, not sell, and tend to be damaged by making processed products and marketed as the village's superior product. One of the processed products from shallots can be formed into Stiko (stick onion). With the assistance in this empowerment, it can make the community more creative in utilizing the natural resources available in their area and produce innovative products that have economic value and become the superior product of the village.

The use of pesticides by shallot farmers in Brebes shows that the use has exceeded the recommended dose. The excessive use of pesticides has an impact on decreasing soil fertility, reducing the amount of production, and also has a negative impact on the health of farmers and consumers who consume shallots (Ngantindriatun et al., 2012). Lestari et al. (2019) also stated that the excessive use of pesticides on agricultural land causes several adverse effects on health. Long-term problems related to pesticides and health problems are caused by the lack of knowledge among farmers and the absence of implementation of national policies from the Regional Government. Most farmers know about the dangers of pesticides,

The strategy for empowering farmers includes environmental, health, technological and socio-cultural aspects. However, the main priority is changing the paradigm of farmers in using pesticides, building strong communities and community organizations and building awareness of healthy living (Harahap et al., 2023). In order to adopt positive behavior regarding safe and healthy use of pesticides when using pesticides, farmers need to be informed and educated using evidence-based learning methods. (Lestari et al., 2019).

Research methodology

Time and place

The research was carried out at PT Sinergi Brebes Inovatif (PT SBI) and farmers who partner with PT SBI, located on Jalan Raya Sidamulya Village, Sidamulya, Wanasari District, Brebes Regency, Central Java. The location was chosen because it is known as the center of shallots. PT SBI is the result of implementing the formation of the first Farmer Owned

Enterprise (BUMP) established by farmers in Brebes Regency and has successfully exported products to other countries. This research was conducted from April 2023 to May 2023, through a Focus Group Discussion (FGD) scheme and with open-ended interviews. The FGD was attended by 10 participants from various backgrounds, including farm labourers, farmers and PT SBI directors who participated in the discussion. In addition, the author also explores information and opinions through open-ended interviews with representatives of philanthropic institutions, namely the BSI Maslahat waqf manager. Participants provide views and input regarding the issues discussed, enabling the discussion to produce accurate and precise conclusions.

Data analysis method

This study uses a qualitative research method known as the naturalistic research method. This method collects and analyzes data in the form of human words and actions, and does not practice itnot counting or quantifying the data obtained. Descriptive approach is also used in this research. According to Sugiyono (2009), qualitative methods are social science research methods carried out under natural conditions, while Afrizal (2016) explains that qualitative methods do not analyze numbers.

This descriptive analysis method is used to analyze the partner farmer assistance model using *The Triple Layered Business Model Canvas approach* by Joyce & Paquin (2016) which consists of three Business Model Canvas models namely Economic Business Model Canvas, Environmental Life-Cycle Business Model Canvas, and Social Stakeholder Business Model Canvas. The three models each have 9 components. Then describe the PT SBI assistance work unit model that will be applied to PT SBI partner farmers.

Results and Discussion

Stage 1: Empathize

At the empathize stage, a mapping of actors who play a role in the process of empowering partner farmers of PT SBI was analyzed. Some of the actors who are considered to have important roles are farmers, farm labourers, management of PT SBI, banks, philanthropic institutions, as well as the Directorate General of Horticulture, Ministry of Agriculture.

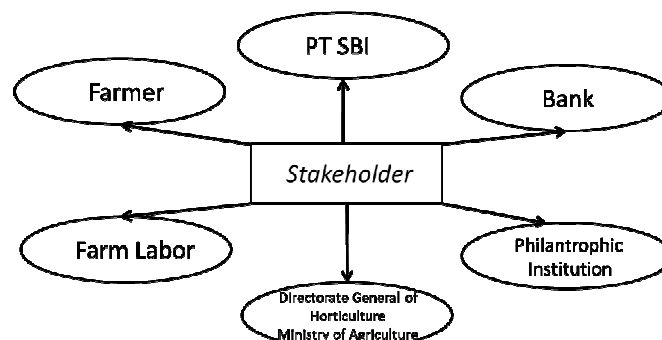


Figure 1. Stakeholder Mapping

After stakeholder mapping was carried out, an empathy stage was carried out by interviewing the users who will deal directly with the proposals to be formed, namely farmers and PT SBI.

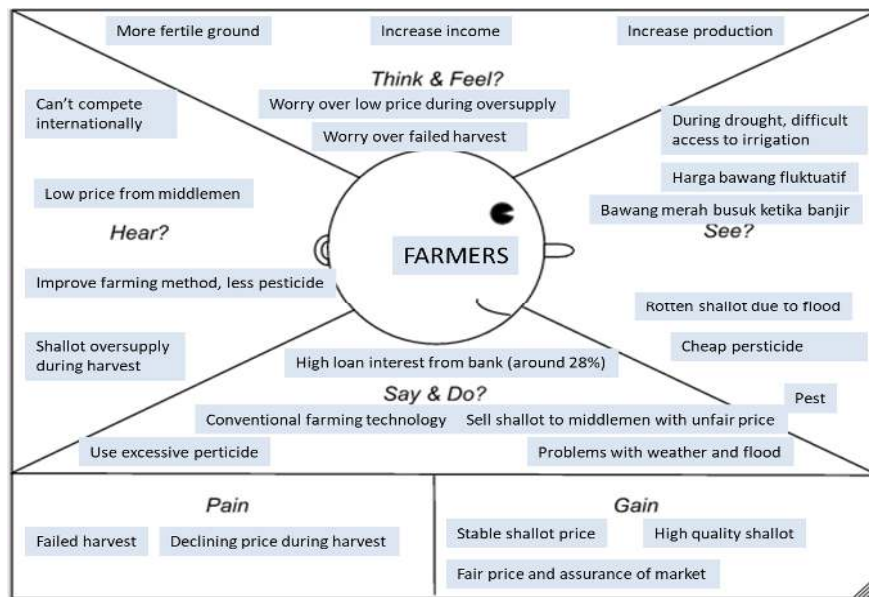


Figure 2. Empathy map from the farmer's point of view (Source: Data processed, 2023)

Based on interviews with farmers, the following empathy map was produced:

1. *See:* During the dry season, water for irrigation is difficult to obtain. Soil fertility is reduced due to excessive use of pesticides. Many offer pesticides at low prices, so farmers tend to use pesticides. In the market, the price of shallots tends to fluctuate depending on the number of offers.
2. *Hear:* Farmers heard that the way of farming that has been practiced so far needs to be improved, for example the excessive use of pesticides. The shallots produced by Brebes cannot compete in the international market because prices from other countries are cheaper, and the shallots with poor quality cannot be purchased by large factories. When the harvest occurs over supply so that the selling price of shallots falls. In addition, there are low price offers from middlemen who usually use the debt bondage system.
3. *Feel & Think:* Farmers expect an increase in income with a fair selling price for shallots and increased production. Farmers want to have more fertile land in order to increase the quality of production. Farmers are worried about crop failure due to floods or pest attacks and falling prices when there is oversupply.
4. *Say & Do:* Farmers said that there are many obstacles in the planting process, especially weather and floods. The farming process still uses traditional agricultural technology and large amounts of pesticides. Farmers often sell their produce to middlemen whose prices can be detrimental to farmers because they receive the payment before harvest season (*ijon*), so the quantity of production is not accurate. Farmers have access to capital from banks but the interest is quite high, reaching 28%.
5. *Pains:* The risk that farmers worry about is crop failure due to flooding or pest attacks. Farmers feel very disappointed if the price of shallots drops, as happened in 2016, causing demonstrations.
6. *Gains:* Farmers will be successful if the yields are of high quality, more stable shallot prices and market certainty (buyers) at a fair price.

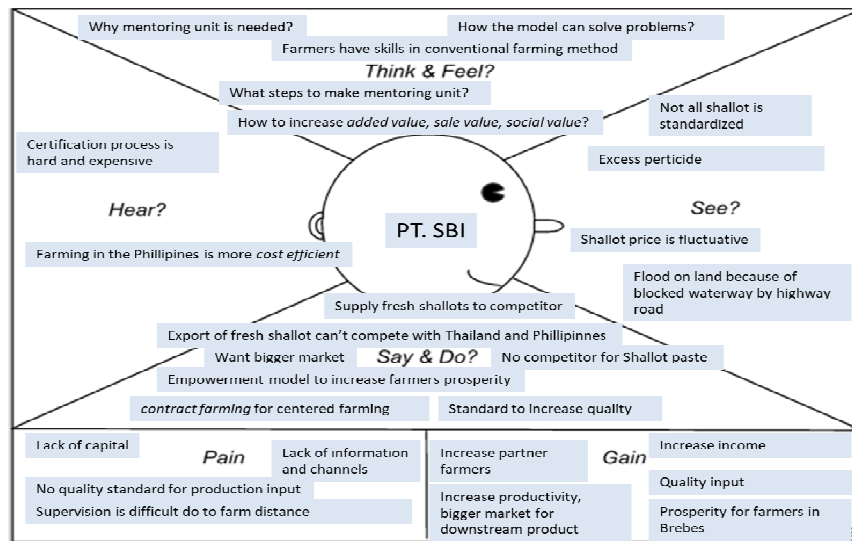


Figure 3. Empathy map from PT SBI (Source: Data processed, 2023)

Based on the Focus Group Discussion with PT SBI, an empathy map was compiled from the point of view of PT SBIs as follows:

1. **See:** In line with what farmers see, PT SBI also sees that the price of shallots is less stable and not all shallots meet factory standards. PT SBI sees that farmers are still using traditional farming methods and excessive pesticides. Another problem is flooding on agricultural land during the rainy season due to water flow that is difficult to recede because it is blocked by the toll road and there is only one floodgate.
2. **Hear:** PT SBI heard that the certification process for standardizing shallots and their processed products requires a large investment and the process is difficult. Therefore, PT SBI decided to distribute products to countries that do not require certification. In addition, PT SBI heard that farms in the Philippines are using more modern irrigation technology so as to improve cost efficiency.
3. **Feel & Think:** PT SBI thinks about how to increase added value, sale value, social value for farmers. PT SBI feels that farmers are experienced with conventional farming techniques. PT SBI thinks about the possibility of needing a model of assistance to partner farmers. It takes the right steps to make the mentoring model so that it can answer the problem.
4. **Say & Do:** PT SBI said that exports of fresh shallots were still unable to compete with other countries such as Thailand and the Philippines in terms of price. PT SBI requires a stable and wider market. A unit is needed that can advocate the problems and wishes of the farmers. In terms of production, PT SBI plans to conduct contract farming with farmers so that land is controlled centrally. For now, it is still constrained by the location of agricultural land which is separated. In terms of sales, currently PT SBI also supplies shallot raw materials to competing companies and markets its products to countries that do not require certification. Standardization is needed to improve the quality of shallots so that they can be certified. PT SBI's superior product, which has no competitors, is shallot paste.
5. **Pains:** One of the obstacles in product marketing is the lack of information and marketing channels. Certification is still hampered by limited funds. If following standardization according to international requirements, the implication is higher prices. To fulfill shallots

as raw material for production, it is difficult to monitor agricultural land and implement production SOPs because of the separate locations

6. *Gains*: PT SBI intends to increase the revenue of PT SBI by having consumers for broader and continuous downstream products. PT SBI also wants to increase productivity and obtain quality production inputs. PT SBI is also trying to improve the welfare of farmers in Brebes by increasing the number of farmer partners.

Stage II: Define Problems

Problems found with PT SBI and its farmer partners in the field based on empathize stage include:

1. *Farmer capital*

PT SBI has partner farmers, namely the Sido Makmur farmer group, who cultivate their shallots and then the results are absorbed by PT SBI to be processed back into processed shallot products. But often, partner farmers have problems accessing capital, especially small farmers who want to upgrade to become big farmers, as well as farm workers who want to upgrade to become farmers.

2. Standardization of shallot production

Shallot farmers still often use excess pesticides that pollute the soil and affect soil fertility. This is a challenge for PT SBI and farmers for the sustainability of shallot farming quality in Brebes. Even though the Integrated Pest Management Field School (SLPHT) has been implemented and pesticide subsidies have also been removed, the reality in the field is that the use of pesticides continues to increase every year (Sri Wahyuni et al. 2019).

3. Market development

PT SBI acts as a corporation that processes shallots through downstream processing and act as a distributor from shallot farmers to the market. Apart from producing processed shallots, PT SBI also sells fresh shallot products to consumers, both B2B and B2C. PT SBI still has difficulty entering international markets such as Japan and several European countries due to the excessive use of pesticides in shallot farming. In addition, PT SBI also had difficulties in finding new export buyers because the prices offered were less competitive with shallot products from neighboring countries, Thailand and the Philippines. Market development can be carried out optimally if upstream production inputs run well, are not constrained by access to capital, and meet the standardization of shallots which are market demand and PT SBI's SOP.

Stage III: Ideate

A. *Triple Layered Business Model Canvas: Economic Layer*

Description of the economic layer in business model canvas of PT SBI:

1. *Customer Segments* is divided into B2B: Seasoning Industry, Horeca; B2C: Modern Retail, Central Market, Direct Consumer; and Export Market.
2. *Value Propositions*, namely downstream products (shallot paste, fried shallot, crispy shallot), unique products and not many competitors (shallot paste). Empowering more than 100 housewives, partner farmers and group members to get high-priced sales, make it easier for consumers to cook, provide spiritual assistance to farmers, and extend the shelf life of shallots through processed onion paste.
3. *Channels*, includes domestic and foreign exhibitions, e-commerce, social media, customer service to direct offers for businesses.

4. *Customer Relations*, includes personal assistance through a call center, making attractive offers at exhibitions, brand awareness through social media, and self-service through e-commerce.
5. *Revenue Streams*, namely sales of fresh shallots and downstream products in the form of pasta, fried onions and crispy onions, honorarium as speakers in education and training activities, administration fees as banking agents (BRI link), agro-tourism tickets/packages.
6. *Key Resources*, in this case permanent employees, day laborers, production machines.
7. *Key Activities*, in this case planting red shallots on land belonging to farmer groups, partnering with other farmers/farmer groups, producing processed onions from crops planted on farmer groups/partners' land and selling fresh and processed shallot products.
8. *Key Partners*, in this case the Directorate General of Horticulture, Ministry of Agriculture, Philanthropic Institutions, Banks, Partner Farmers, and Insurance.
9. *Cost Structure*, in this case, namely employee salaries, production and maintenance machine costs, raw material prices for shallots, salaries for farm laborers and shallot peelers, additional raw materials for producing downstream products and certification costs.

B. Triple Layered Business Model Canvas: Social Layer

The following is the description of the social layer in business model canvas of PT SBI:

1. *Local Community*, the Sido Makmur Farmers Group, Philanthropic Institutions (LAZ, Nazhir Waqf and NGOs), Insurance Companies, Local and Central Governments, other Farmer Groups supplying shallots.
2. *Social Values*, in this case empowering shallots-peeling women, ensuring market certainty for farmers, increasing the income potential of farmers and farm workers, improving consumer health with healthy products from natural ingredients, empowering local wisdom and helping housewives and cooks in cooking with practical products.
3. *Employee*, farmers with years of experience and local workforces with the required skills.
4. *governance*, in this case the decision was made in a meeting with the farmer and the decision was made in an open and transparent manner.
5. *Societal Culture*, namely agricultural technology training and assistance for capital loans.
6. *Scale of outreach*, in this case the domestic market and several export countries
7. *End Users*, the efficiency of cooking time, delicious dishes, practicality and health.
8. *Social benefits*, empowering farmers with assistance, empowering farm laborers with productive land waqf programs, increasing the spiritual welfare of farmers/communities, and increasing the financial welfare of farmers/communities.
9. *Social Impact*, the potential social impact, namely social conflict between farmers and middlemen.

C. Triple Layered Business Model Canvas - Environment Layer

Description of the environmental layer in business model canvas of PT SBI:

1. *Functional Values*, namely fresh shallots and shallot downstream products, also utilizing peeled onion skins as animal feed.

2. *Material*, soil free of salinity, fertilizers and ZPT (Growth Regulating Substances), pesticides, quality shallot seeds (Bima Brebes), land/rice fields and alsintan (agricultural machinery).
3. *Production*, the processing of shallot downstream products and the shallot processing factory.
4. *Supplies and Outsourcing*, electricity at the factory, energy use for downstream production machines, and water for the shallot washing process.
5. *Distributions*, trucks and packaging.
6. *Use phase*, maintenance of production tools and machines, energy for cooking shallot products, use of water and electricity for the preparation of shallot raw materials.
7. *End of life*, plastic packaging and operational machinery.
8. *Environmental Impacts*, the excess use of plastic from downstream product packaging and the carbon footprint of the production process.
9. *Environmental benefits*, namely the potential for revitalizing agricultural land conditions.

Phase IV: Prototype

Based on the results of the ideation process, it was planned to form a companion unit for Brebes shallot farmers at PT SBI as a companion to partner farmers of PT SBI with the hope of being a solution to the problems that arise in the process of managing shallots in Brebes. One of the duties of formulating a Brebes shallot farmer companion unit is to formulate a model for an empowerment program. The empowerment model for PT SBI's companion unit is named the Shallot Farmer Empowerment Program or Program Pemberdayaan Petani Bawang Merah (PPBM). The PPBM program is later expected to become one of the flagship programs of PT SBI in order to optimally develop and utilize the economic, environmental and social shallot farmers in Brebes.

1. PPBM Program Mission

The missions carried out by PT SBI's mentoring unit through the PPBM program include developing economic activities, improving the quality of human resources, community participation, maintaining environmental sustainability, strengthening capital, and strengthening socio-economic institutions for the people of Brebes Regency.

2. PPBM Program Targets

- a. Increase the production and productivity of shallot farmers and farm laborers
- b. Increase linkages in the pattern of production, distribution, trade and marketing within the scope of shallot farmers with other related parties.
- c. Increase the scientific capacity and skills of farmers, farm workers related to cultivation that maintains environmental sustainability.
- d. Increase the spiritual obedience of farmers and farm workers in religion.
- e. Increase the role and function of PT SBI in supporting the PPBM program.

3. Scope of Activities

- a. Facilitate access to capital for farmers and farm labourers.
- b. Regulate shallot cultivation that is environmentally friendly and sustainable.
- c. Facilitate farmers and farm laborers related to shallot marketing access.

The model of the proposed empowerment or mentoring program can be seen in the following chart:

Chart 1. Strategic Framework for the Shallot Farmer Empowerment Program (PPBM)

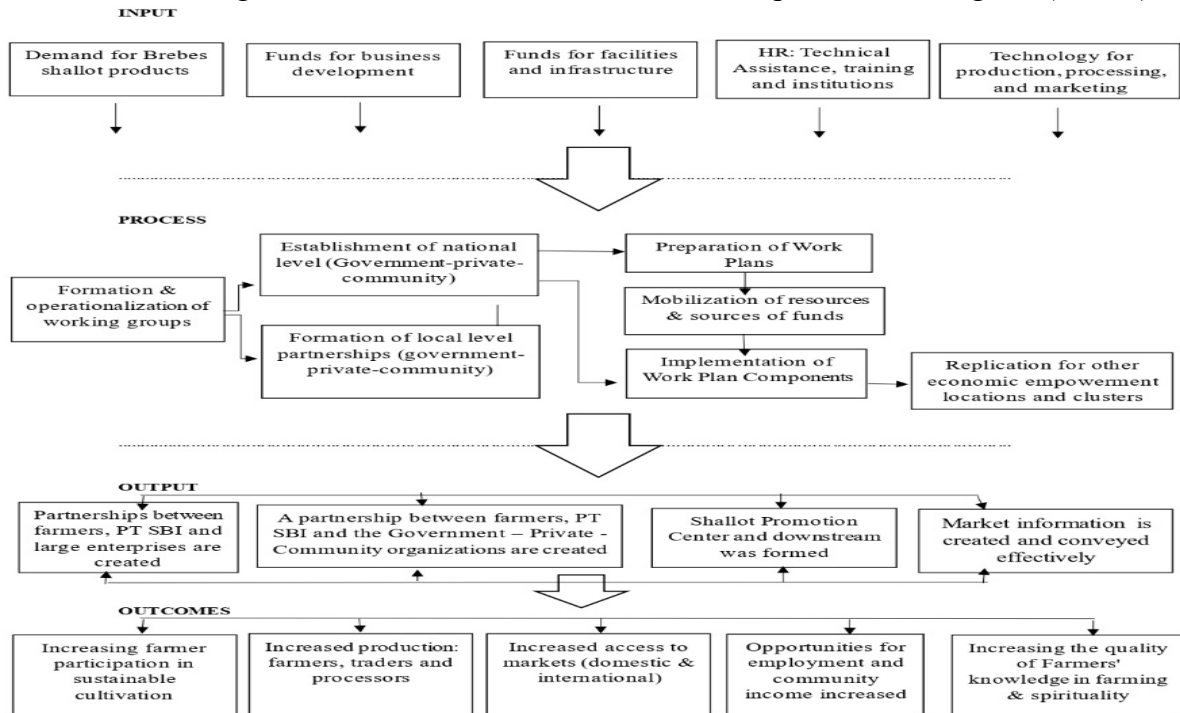


Chart 2. Model of Shallot Farmer Empowerment Program (PPBM)

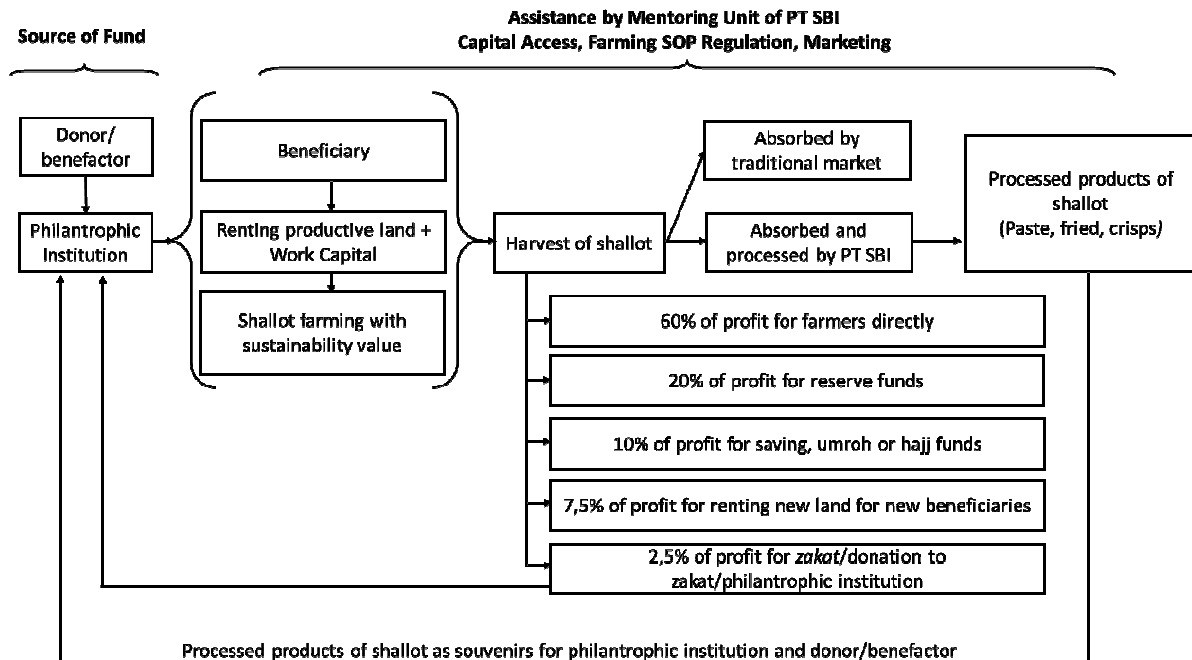
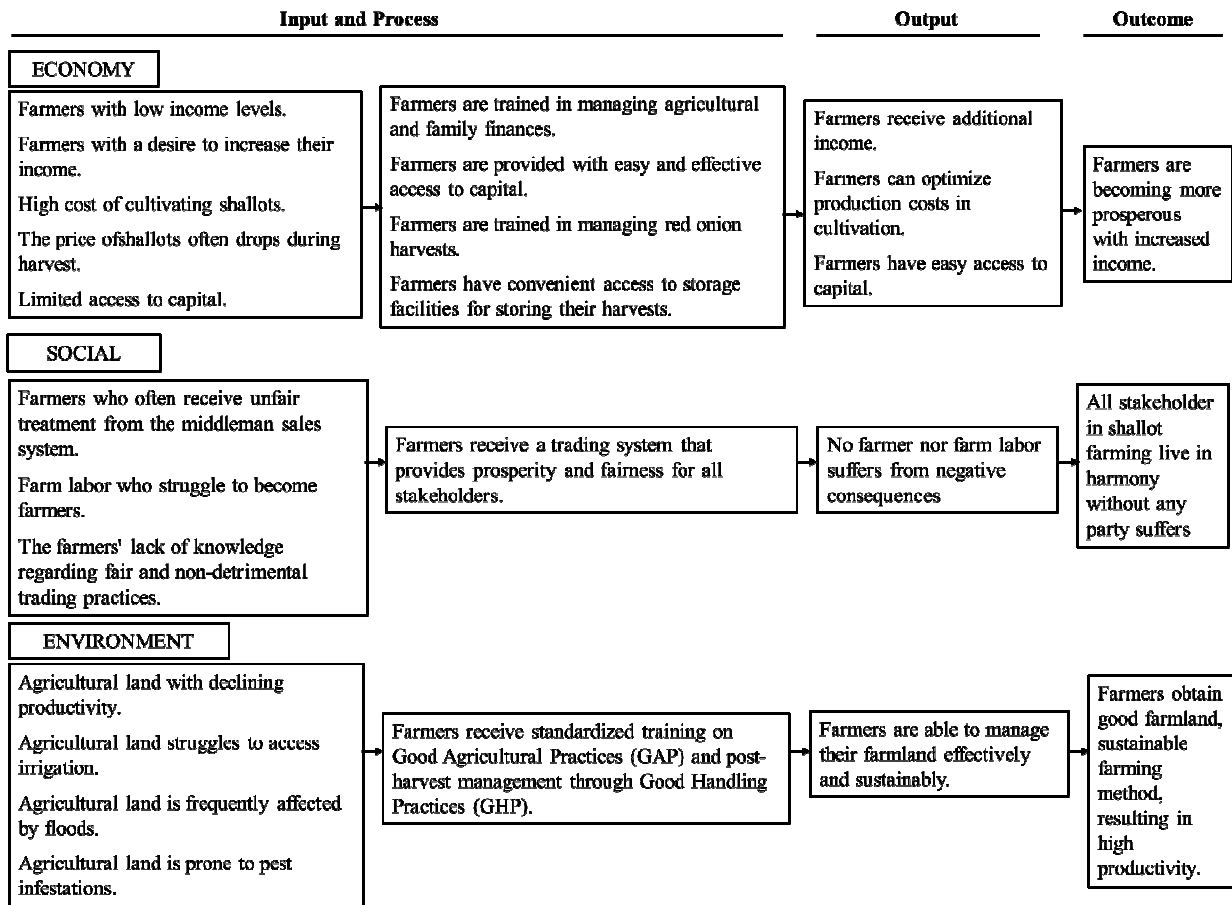


Chart 3. Concept Model of Shallot Farmer Empowerment Program (PPBM)



The proposed empowerment program model is expected to be a solution to the problems that arise, including:

1. Farmer capital problems

The Shallot Farmer Empowerment Program (PPBM) model as a solution to problems related to farmer capital in the following way:

- Provide access and information regarding available sources of capital.
- Provide assistance in applying for business or working capital.
- Assist or help facilitate training activities on business financial management and risk management.

2. Standardization of shallot production

To increase farmers' understanding and performance in order to increase production and meet the demand for high quality shallots, the production process must be carried out in accordance with Standard Operating Procedures (SOP) and Good Agriculture Practices (GAP). The Assistance Unit can prepare production SOP or implement good and correct shallot cultivation techniques according to GAP standards as well as post-harvest processing and product packaging according to Good Handling Practice (GHP) standards. In order to support the effectiveness of the implementation of good and correct shallot cultivation techniques in accordance with the GAP and GHP standards, positive behavioral commitment is needed from farmers who have an awareness of healthy living, through information and education to farmers using evidence-based learning methods.

If PT SBI's mentoring unit does not have employees with the required competencies, an alternative solution is to collaborate with competent parties to provide the required assistance or training. There are various parties that may be able to help facilitate this, including:

- a. Relevant government agencies such as the Ministry of Agriculture or the Department of Agriculture or other institutions related to agriculture or health.
- b. Universities or educational institutions that have study programs in the fields of agriculture, agribusiness and health.
- c. Non-governmental organizations or farmer organizations with expertise and experience in agriculture or health.
- d. The company operates in the agriculture/health sector and has a corporate social responsibility program that includes training and coaching for farmers.

3. Development market

One of the effective ways to introduce fresh and processed shallot products to consumers in today's digital era is through digital marketing. Several things can be done by the Mentoring Unit of PT SBI in order to assist market development include:

- a. Help to facilitate mentoring or training activities by related parties in compiling online marketing strategies in order to expand marketing networks such as social media marketing, resellers or dropshippers, email marketing, influencers, Google Ads, Search Engine Optimization (SEO) and Search Engine Marketing (SEM). The way that can be done is to collaborate with universities or business schools that have a digital marketing field.
- b. Providing assistance to farmers and the Marketing Team of PT SBI to expand the marketing network through provision access and online marketing information. Also, how to build Brand Awareness so that it is known by many people, as well as possible collaborations to expand the marketing network including:
 - Promotion through social media, e-commerce, advertising, and agriculture-related events
 - Collaborate with distributors who have an extensive network so that fresh and processed shallot products can reach a wider market.
 - Collaborate with influencers or bloggers who have a sizable number of followers, so that they can help expand the reach of promotions, increase brand awareness, and attract more potential consumers.
 - Join the digital marketing community as a source of information and a means to build networks and business relationships.
 - Collaboration with local business associations or chambers of commerce. Kadin Indonesia acts as a forum and vehicle for coaching, communication, information, representation, consultation, facilitation and advocacy of Indonesian entrepreneurs.

Conclusion

Based on the results of analysis and research, the main problem with PT SBI is farmer capital, standardization of shallot production, and market development. To overcome this problem, empathy mapping is used which is based on design thinking. The steps in design thinking are empathize, define, ideate, prototype, and test. Researchers classify perspectives from farmers and PT SBI at the empathy mapping stage. This research uses the Triple-Layered Business Model Canvas (TLBMC) method in the establishment of the PT SBI

mentoring unit as an alternative solution to determine the main problems of PT SBI. The findings of this study support the PT SBI partner farmer model with the aim of increasing the production and productivity of shallot farmers and farm labourers,

The limitations of this study are that the research is still ongoing until the prototype stage and has not been able to carry out until stage 5 (Test Stage). Future research should focus on the implementation stage of the PT SBI and the adaptation of this model are related to the sustainability of shallot product development in Brebes to market expansion to improve the welfare of farmers in Brebes.

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