Strategy development of commodity potato granola (*Solanum tuberosum* L.) in Tombolo Pao district Gowa Regency

M I Saleh¹, D Rukmana² and N Hamid³

¹Agribusiness Study Program Students, Postgraduate School of Universitas Hasanuddin
²Lecturer of Agribusiness Program, Postgraduate School of Universitas Hasanuddin
³Lecturer of Management Department of Universitas Hasanuddin

E-mail: muhikmal0102@gmail.com

Abstract. The study aims to describe the granola potato agribusiness in the Tombolopao District; identify strategic issues of granola potato agribusiness to see internal and external conditions and formulate priority strategies for developing granola potato agribusiness in the Tombolopao District Gowa Regency. The research method is descriptive. The farming analysis is IFE, EFE and SWOT analysis. The results show that the potato agribusiness system condition in the of Tombolopao is still not running optimally, due to the non-functioning of the upstream subsystem, where the procurement of production inputs (for granola potato seeds). In the farming subsystem, potato cultivation has provided benefits to farmers. The farming is feasible to be developed with R/C for cash of 3.30. Which means that every rupiah incurred will provide revenue of 3.30, while R/C for the total cost of 3.25. Which means that every rupiah cash incurred will provide 3.25 receipts. In the marketing subsystem, potatoes have been marketed to Kalimantan and Southeast Sulawesi. Prices are determined by collectors. In the downstream (processing) subsystem. Not all of the processed potato entrepreneurs use potatoes as their raw material, which causes new potatoes to be sold in fresh products. In the service and support subsystem, supported by agricultural extension workers, who accompany and provide information related to potato cultivation, but from supporting capital., farmers have not utilized credit provided by financial institutions because they still use private capital. Key internal factors, high demand with a weight of 3.60 is the main strength, and weaknesses are at the level of capital which is still limited with a weight of 2.00 while the external key factor of the opportunity factor that ranks first in the support of the government with a score of 0.22 and weaknesses is in the location of relatively expensive production facilities with a score of 0.18

1. Introduction
Potato (*Solanum tuberosum* L.) is one of the horticultural products that have priority for the development of the consumption of diverse foods so that the potato is one of the most important food products in the world. This can be seen in the consumption of potatoes in the world, where consumption occupies the fourth place after rice, wheat and corn. The increase in potato consumption in the world is related to the level of potato production. As seen in table 1, the countries in this part of Asia are the largest potato producers in the world. This is supported by the topography of the world's...
Potato producing countries. Potato plants can live in the highlands with an altitude of approximately 1,300 to 1,500 meters above sea level.

Table 1. World potato production in 2012.

| Country             | Production (million tons) |
|---------------------|---------------------------|
| Chinese             | 125.6                     |
| India               | 94.9                      |
| United States       | 61.8                      |
| France              | 40.3                      |
| Russia              | 37.7                      |
| Australia           | 29.9                      |
| Canada              | 27                        |
| Pakistan            | 23.5                      |
| Germany             | 22.4                      |
| Turkey              | 20.1                      |
| Indonesia           | 16.6                      |

Source: FAO 2013

Potatoes are a horticultural commodity that has development opportunities in agribusiness and agribusiness. The magnitude of this opportunity is due to relatively stable potato prices, high commercial potential, commercial segments can be selected according to capital, guaranteed and safe markets. Besides, potatoes have a longer shelf life than other vegetables such as onions, cabbage and beans. Development of global institutions that support potato agribusiness services through institutional farmers and stakeholders. One of the global agribusiness support services for farmers is the National Potato Council (NPC), which is a voluntary association of potato producers that focuses on government policies and regulations at the national and international level. The NPC acts as a channel for the aspirations of the potato industry in Washington DC and works to improve conditions that allow farmers to produce, transport and market their products in the United States and throughout the world.

Indonesia is an agricultural country that has a fairly wide range of agriculture. Seeing this extraordinary benefit, potatoes have the potential to generate foreign exchange through exports. It must also be supported by a good agribusiness system to produce quality products. The agribusiness system is the system that contributes the most to the formation of gross domestic product (GDP), employment opportunities and opportunities to participate in increasing exports [1]. The diversity of agribusiness systems is the totality or performance units consisting of upstream subsystems, agriculture, performance processing, marketing, institutions and supporting institutions.

Table 2 shows that the area harvested, the production and productivity of potatoes in Indonesia from 2014 to 2018 fluctuated the area of production, production and productivity, but even so, the decrease was relatively insignificant. The potato plant is a type of tuber-shaped plant native to Europe. Potato plants are suitable in subtropical climates such as Indonesia, one of which is located in the province of South Sulawesi [2]. Potato plants can have a positive impact on farmers, according to data from BPS South Sulawesi Province that potato productivity in South Sulawesi (table 3).

Table 3 shows that the crop area that can affect potato production, the larger the production area, the greater the production and productivity. The subdistrict of Tombolo Pao Gowa is one of the subdistricts of the province of South Sulawesi, which is one of the three districts in the potato production centre. Year after year in the Gowa Regency area 18 districts have 32,174 hectares of rice paddies, drylands with an area of 10,320 hectares, each of which has reliable products.
Table 2. Harvested area, production and productivity of potatoes in Indonesia in 2014-2018.

| Year | Harvested area (Ha) | Production (tons) | Productivity (Tons/Ha) |
|------|---------------------|------------------|-----------------------|
| 2014 | 76.291              | 1,347,815        | 17.67                 |
| 2015 | 66.983              | 12,192,697       | 182.03                |
| 2016 | 6.645               | 12,130,384       | 1,825.49              |
| 2017 | 75.611              | 11,647,381       | 154.04                |
| 2018 | 68.683              | 12,847,597       | 187.06                |
| Average | 58,842.6           | 10,033,175      | 473.26                |

Source: Ministry of Agriculture (Directorate General of Horticulture) [1]

Table 3. Harvested area, production and productivity of potatoes in South Sulawesi.

| Year | Harvested area (Ha) | Production (tons) | Productivity (Tons/Ha) |
|------|---------------------|------------------|-----------------------|
| 2012 | 1,433               | 118,802          | 82.90                 |
| 2013 | 1,654               | 18,420           | 11.14                 |
| 2014 | 1,816               | 23,444           | 12.91                 |
| 2015 | 1,342               | 2,627            | 1.96                  |
| 2016 | 1,925               | 295,215          | 153.36                |
| Average | 1634               | 91701.6         | 52.45                 |

Source: BPS South Sulawesi Province, [2]

Gowa Regency has climatic types C and D (Smith Ferguson) with an average rainfall of 2000-3000 mm/year that has a different air humidity between the highlands and lowlands, has 4 types of soil, namely alluvial in the lowlands, mountainous regions Latosol Pada, Andosol In the mountainous regions, red and yellow Podsolik in the census area and the population in Gowa Regency in 2018 totalled 751,981 people with 370,151 men and 381,830 people [3].

Table 4. Potato production based on the area of harvest, production and productivity in the Gowa Regency.

| Year | Harvested area (Ha) | Production (Tons) | Productivity (Tons/Ha) |
|------|---------------------|------------------|-----------------------|
| 2014 | 855                 | 145,350          | 170                   |
| 2015 | 799                 | 13,583           | 17                    |
| 2016 | 2,002               | 346,196          | 173                   |
| 2017 | 2,002               | 346,196          | 173                   |
| 2018 | 2,158               | 376,012          | 174                   |
| Average | 1563.2              | 245,467.4       | 141                   |

Source: Department of Food and Horticulture, Gowa Regency [3]
Table 4 shows that the harvested area, production and productivity of potato plants in Gowa Regency have increased from 2014 to 2018. Tombolo Pao District is a district that is located very close to consumers or markets, only around 70 km from the center of Makassar. The number of villages/village office is 9 villages/village office which is the result of the division from Tinggi Moncong District. The total area of Tombolo Pao district is 251.82 km\(^2\) with a population of 14,955 men, 14,508 women with a total of 29,463. This is a benchmark that the distance of farmers to see a very large market potential so that they can obtain a sale value from high production and obtain superior seeds, one of which is the production of granola potatoes which are in the district of Tombolo Pao. The following is the level of harvested area, production and productivity of potatoes in the Tombolo Pao District.

Table 5. Potato production by harvest area, production, and productivity in Tombolo Pao District

| Year | Harvested area (Ha) | Production (Tons) | Productivity (Tons/Ha) |
|------|---------------------|-------------------|------------------------|
| 2014 | 362                 | 57,540            | 158.95                 |
| 2015 | 536                 | 9,630             | 17.97                  |
| 2016 | 554                 | 89,580            | 161.70                 |
| 2017 | 712                 | 128,160           | 180.00                 |
| 2018 | 555                 | 95,870            | 172.74                 |
| Average | 543.8     | 76,156          | 138                    |

Source: Department of Food and Horticulture, Gowa Regency [3]

Table 5 based on the level of production, harvested area and productivity of potatoes in the Tombolo Pao district fluctuated greatly from 2014 to 2018 because of the lack of knowledge for farmers to use superior seeds and lack of capital to obtain these superior seeds for most farmers so the farmers planted the seeds repeatedly which resulted in decreased productivity.

One type of potato that is cultivated by people in the District of Tombolo Pao is granola potato. Potatoes granola contains more carbohydrates and lower water content. This makes processed granola potatoes into chips and other foods will be tastier and more delicious. In terms of cultivation, potato granola becomes more resistant to pests or diseases. Potato granola is an important vegetable commodity that has prospective business opportunities. Until whenever this product will still be consumed and is needed by the community. This is because in granola potatoes there are some sodium contents, as a source of vitamins C and B1, mineral phosphorus, iron and potassium [4].

2. Research methods

This research was conducted in the District of Tombolo Pao, Gowa Regency. This research was conducted by purposive sampling with the location requirements as the development of potato commodities. This research was carried out from July until September 2019.

Determination of the number of farmers is done by selecting respondents as many as 30 farmers who were selected using probability sampling techniques, namely simple random sampling where respondents are taken from all members of the granola potato farmer population that is done randomly without regard to strata in the population [5].

To determine the strategy for developing potato agribusiness in the Tombolo Pao District of Gowa district, the speakers were taken from stakeholders and related experts/experts who can provide an assessment of factors that greatly affect the development of the granola potato commodity in the Tombolo Pao District, namely:
1. Head of Horticulture, Gowa Regency.
2. Head of the Field of Processing and Marketing of Agricultural Production Products of the Gowa Regency Agriculture Office.
3. Agricultural Extension Workers
4. Head of Mamampang Village
5. Head of Kanreapia Village

With the proportion of each stakeholder varies according to the level of interest of stakeholders and decision-makers in the development of granola potato agribusiness. Of the five informants will be divided into three levels with the reason, the higher the level, the informant is the most expert in strategic decision making, namely:
1. The first informant is the first level with a proportion of 36 percent, this is done because the voting proportion must be below 50 percent as evidence that it is not only the resource person who determines future decisions
2. The second, third and fourth information is the second level with a proportion of 17 percent which is half of the proportion of the first level and
3. The fifth informant is the third level with a proportion of 8 percent which is half of the proportion of the second level

The data obtained are primary and secondary data which are processed by quantitative and qualitative methods. In this research, the analysis that will be used is descriptive, farming analysis, IFE and EFE analysis and SWOT analysis.

In this research, there are two parties, namely external and internal parties. Internal parties in this study are the actors in the on-farm subsystem, namely potato farmers. On the other hand, the external parties in this study were divided into two, namely external tasks and external remote. The external task force consists of (1) upstream subsystem actors, namely the nursery industry and providers of production facilities; (2) marketing subsystem actors, namely suppliers (traders) and potato consumers; (3) downstream (processing) subsystem actors, namely the potato processing industry; and (4) subsystem of supporting institutions, namely financial institutions. While the external remote is the local government at the research location.

3. Results and discussion

3.1. Description of potato agribusiness in Tombolo Pao District, Gowa District

3.1.1. Upstream Subsystem. Granola potato agribusiness included in the upstream subsystem is the provision of seeds which is a benchmark of success in the cultivation of potato granola characterized by the availability of quality seeds where the parent, not defective and breeding is done correctly because it has the linkages of various elements so that the cultivation of potatoes. The granola reaches the desired target [6]. Granola potato agribusiness in the Tombolo Pao District area shows that the business carried out by farmers for breeding business has not fully used technology as a whole, which is only a nursery done by farmers only to meet the needs for sustainable production. The problems faced by granola potato farmers in the District of Tombolo Pao Regency are as follows:
   a. The lack of granola seedlings is used to supply farmers' needs.
   b. Lack of human resources to utilize existing technology.
   c. Uncertain season
   d. Seeds that are affected by the disease range because of the lack of supply of certified seed
   e. There is no training provided by the government in nursery techniques and cooperation between the government and farmers to deal with the scarcity of quality seeds.
   f. Lack of analysis or knowledge to get around the market.

3.1.2. Farm Subsystem. Farming costs are all costs incurred by farmers when doing granola potato farming. Based on the cultivation technique of potato granola farming, the cost of this farm consists of costs that are completed and costs are shortened 9 [6]. Costs paid include the cost of seeds, pesticide costs, the cost of purchasing manure, artificial fertilizer, the cost of Foreign Family Labor (TKLK) and the Land and Building Tax (PBB). The average number of seeds used by farmers is 1,143 kg /ha. The
average cost of seedlings per hectare incurred by granola potato farmers is IDR. 8,735,294/ha. The price of granola potato seeds at the time of the study was IDR. 15,000/kg. In fertilizing activities, the types of fertilizer commonly used by respondents for the cultivation of potato granola are quite diverse. Not only from the type of fertilizer but also from the dose used. The types of fertilizer commonly used are manure, urea and ZA. Where the costs to be paid by respondents for the purchase of fertilizer are manure for IDR. 12,000/sack, urea fertilizer for IDR. 110,000/sack, ZA fertilizer for IDR. 100,000/sack. The amount of fertilizer used by farmers depends on the area of land they have and the cost they spend depends on the amount of fertilizer used. The following table presents the average fertilizer use and costs incurred by the respondent farmers in the granola potato farming.

| Types of fertilizers | Average usage/sack | Cost     |
|----------------------|--------------------|----------|
| Manure               | 153.33             | 1,840.000|
| ZA                   | 1.14               | 114.379  |
| Urea fertilizer      | 2.48               | 273.202  |
| Total                | 156.96             | 2,227.581|

Source: Primary data after processing, 2019

In table 6, you can see that the total cost of buying fertilizers per hectare is IDR. 2,227,581. This rate is obtained based on the amount of fertilizer used by the respondent's farmers. To maintain good productivity of granola potatoes, respondents not only carry out fertilization activities but also carry out pest and disease control activities by spraying pesticides. The amount of pesticide used by farmers depends on the area of land they have and the cost they spend depends on the amount of pesticide used. In the cultivation of potato granola, farmers only use pesticides according to their needs, this is because potato granola plants are resistant to diseases.

From the results of the study, it was discovered that the method of pest control by farmers is to cut and discard the unproductive petiole so that sunlight and sprayed pesticides can enter the productive leaves. The average use of pesticides used by farmers per hectare is 2 bottles and the average cost incurred per hectare is IDR. 58,000. Costs incurred for the purchase of pesticides amounted to IDR. 29,000/100 ml bottle as necessary.

Income is the value received by farmers from the sale of their farms. The income here can be divided into two, namely cash receipts and calculated income. Cash receipts are obtained from the number of products sold multiplied by the sale price of the farmer. While the estimated income is obtained from the amount of production and it will be used as a seed multiplied by the sale price of the farmer and to see the difference in income and producers of potato granola. The average production per hectare of granola potatoes is IDR. 7,326.80 kg. The sale price of potato granola is IDR. 7,254.90 /Kg. Thus, the average income of the farmer per hectare is IDR. 55,732,026.14 and the estimated average income is IDR. 29,141,667/ha.

The income of agricultural cash costs is the difference between cash receipts and fees paid. The average income of granola potato farmers per hectare is IDR. 38,821,601.31 ha. The total cost of agriculture income is the difference between total income and total costs. The average income for the total cost (benefit) of potato granola producers per hectare is IDR. 58,744,304.58/ha. For more details, data on the amount of income, income and average earnings of granola potato farmers in the district of Tombolo Pao, Gowa Regency (table 7).

The table 7 can be seen that the R/C for the 3.30 cash fee means that each rupee of the cash costs incurred will provide an income of 3.30, while the R/C for the total cost is 3.25 which means that for each rupee the fee cash issued will provide receipts of 3.25. Because the R/C ratio produced in potato granola farming is greater than one, it is feasible to develop this agriculture.
Table 7. Average per hectare of income and income, producers of potato granola in the District of Tombolo Pao

| Explanation                  | Total (IDR) |
|------------------------------|-------------|
| Cash receipt                 | 55,732,026.14 |
| Calculated receipt           | 29,141,667  |
| Total penerimaan             | 84,873,692.81 |
| Total receipt                |             |
| ✓ TKLK                       | 1,078,431.37 |
| ✓ Seedlings                  | 8,735,294.12 |
| ✓ Fertilizer                 | 2,227,581.699 |
| ✓ Pesticides                 | 4,822,385.62 |
| ✓ PBB                        | 46,732.03   |
| Total fees paid              | 16,910,424.84 |
| Cost calculated              |             |
| ✓ TKDK                       | 356,862.75  |
| ✓ Seedlings                  | 8,735,294.12 |
| ✓ Depreciation of Equipment  | 126,806.54  |
| Total costs calculated       | 9,218,963.40 |
| Total cost                   | 26,129,388.24 |
| Cash income                  | 38,821,601.31 |
| Revenue from total costs     | 58,744,304.58 |
| R/C for cash costs           | 3.30        |
| R/C for the total cost       | 3.25        |

Source: Primary data after processing, 2019

3.1.3. Downstream Subsystem. From field observations found in Tombolo Pao District, Gowa Regency, the granola potato business in the downstream subsystem has not been fully processed into a product that can increase economic value. However, no one was involved in the processing sector in the study area, which resulted in the post-harvest farmers only moving the plants from the garden to the farmer's garden to condense and sort the potatoes, they will sell.

3.1.4. Marketing Subsystem. The main problems faced by this subsystem are limited capital problems and the commercialization of fresh products to be sold because farmers have limited access to market information, especially in relation to demand and pricing. This is due to the large number of parties involved in the marketing process where traders meet higher than large traders, but some granola papa producers who have direct access to large traders get higher profits and vice versa to make it more feasible. To say that the monopsony market is a market dominated by buyers, which determines the price and quality that fluctuates a lot. As for the standard and quality which are reasonable prices, so that the mutual benefits between the two parties, namely producers and consumers can be seen in the problem description, it can be seen in the downstream Granola potato subsystem:

a. Farmers are in a weak position to determine prices.

b. Farmers sell their products in fresh form

c. Farmers do not know or are not up to date about the product requirements demanded by the market

d. Farmers do not fully know the quality or reasonable price.

From the results of the research, it can be found that several commercial channels through which granola potatoes are switched from farmers to collectors to large traders, to retailers to consumers, where prices apply at each of their different levels and prices at farmers are the lowest and distribution of granola potatoes has been commercialized in several areas around the Tombolo Pao District and
already in the Kalimantan and Southeast Sulawesi regions, but the price difference is very drastically determined by collectors and/or intermediaries can be dangerous for farmers.

3.1.5. Institutional and Support Subsystems. The current government policy regarding granola potatoes is still related to general crop cultivation, not specifically made. Policies related to granola potatoes must be supported by all parties, not only the Ministry of Agriculture, but also other parties, such as the Ministry of Cooperatives (related to cooperative policies), the Ministry of Economy related to business and credit, including banks, the Ministry of Trade and local governments that produce granola potatoes. Some of the problems associated with the red potato agribusiness support subsystem are as follows:

a. Existing agricultural institutions are still very weak administratively because there is no legal legality
b. The capacity of extension agents as technology sources and intermediary objectives in technology transfer has not been increased.
c. Institutional support for research in the development of granola potato agribusiness is still lacking
d. Institutional support for information technology does not yet exist in various forms of media.
e. Bank institutional capital to improve the performance of potato cultivation is not yet available
f. Government institutional support in preparation and facilitation of infrastructure for farmers, producers, collectors and traders.

3.1.6. IFE and EFE Matrix The key to success (key success factor) is the IFE (Internal Factor Evaluation) matrix for internal factors and the EFE (External Factor Evaluation) matrix for external factors. The IFE matrix summarizes and evaluates key internal factors in the form of major strengths and weaknesses in various functional areas in a business. This matrix can be used as a basis for identifying and evaluating relationships between these fields. The EFE matrix allows the strategy planner to summarize and evaluate the company's key external factors.

3.1.6.1. IFE Matrix. The IFE matrix is obtained through respondents' evaluation of the extent to which internal strategic factors affect the agribusiness of granola potatoes. Respondents assessed the weight and ranking of each internal strategic factor. In the following table, the IFE matrix of potato granola agribusiness in Tombolo Pao district, Gowa Regency.

Based on the analysis shown in the IFE matrix table that has been done produces a weighted value of 2.88, meaning that the Tombolo Pao district is able to utilize the strengths and minimize weaknesses in the development of granola potato agribusiness. The total value can identify that the ability of granola potato agribusiness in the research location in responding to its internal environment is still average.

Analysis of internal key factors on strengths was chosen with the highest score and on the weaknesses, factors was chosen with the lowest score. The main strengths in the analysis of the internal environment of potato granola agribusiness are a high sense of kinship with the highest score of 0.47 and the main weakness is the payment system that is unfavourable to farmers with the lowest score of 0.24.

Table 8. IFE Matrix of granola potato agribusiness in Tombolo Pao District, Gowa Regency.

| Internal Key Factors                           | Average | Average | Score |
|-----------------------------------------------|---------|---------|-------|
| Opportunity                                   | Weight (a) | Rating (b) | (a) x (b) |
| High kinship                                  | 0.16    | 3.00    | 0.47  |
| The desire to move forward                    | 0.13    | 3.00    | 0.39  |
3.1.6.2. EFE Matrix. The EFE matrix is obtained through respondents' assessments of external strategic factors affecting the company. Each respondent gives an assessment of the weights and ratings of each company's external strategic factors as follows.

| External key factors                                | Average Weight (a) | Average Rating (b) | Score (a) x (b) |
|-----------------------------------------------------|--------------------|--------------------|-----------------|
| **Opportunity**                                     |                    |                    |                 |
| Government Support                                  | 0.22               | 0.34               | 0.103           |
| Increasing market share                             | 0.19               | 0.29               | 0.87            |
| The existence of financial institutions providing credit | 0.18              | 0.26               | 0.72            |
| Progress of innovation and technology               | 0.18               | 0.31               | 1.12            |
| **Total**                                           | 1.00               |                    | 4.15            |

Based on the table above shows that the EFE matrix analysis carried out yielded a weighted value of 4.15, meaning that in the District Tombolo Pao Gowa district was able to take advantage of opportunities to avoid threats in the development of granola potato agribusiness. Analysis of the external key factors on the opportunity chosen with the highest score and on the threat, factor chosen with the lowest score. The main opportunity in the external environment analysis of granola potato agribusiness is shown by the opportunity factor with the highest weighted value, namely the support of the government with a score of 1.03 with an average weight of 0.22 and. The highest score on the opportunity factor of 0.44 becomes a benchmark that the research location responds to both the support in the form of assistance and activities. While the main threat is indicated by the threat factor with the highest score on the threat factor of 0.42 shows that when there are political shocks such as riots in the elections and local elections causing the closure of several local markets so that the availability of Granola potatoes on the market decreases resulting in the price of granola potatoes has increased. However, the price at the farm level is low due to the accumulation of farmers' yields.

3.2. Analysis of matrix SWOT
This SWOT analysis includes company internal factor. The opinion put forward [9] which states that the definition of swot is the process of assessing various factors carried out in order to systematically formulate an organizational strategy appropriately.
After knowing the position of potato agribusiness by combining internal and external factors, several potato agribusiness strategies were formulated. The strategies are grouped in 4 parts, namely, S-O strategy, S-T Strategy, W-O Strategy and W-T Strategy (table 10).

Table 10. Analysis SWOT matrix potato agribusiness in the district of Tombolo Pao, Gowa.

| STRATEGIES (S) | WEAKNESS (W) |
|---------------|--------------|
| STRENGTHS (S) | 1. Capital is still limited |
| 1. A sense of family that still exists | 2. Payment system that is less profitable |
| 2. The desire of farmers to move forward | 3. The use of simple technology |
| 3. Partnership system between institutions | 4. Limited marketing |
| 4. The location is close to the market. |
| OPPORTUNITIES (O) | STRATEGY (S-O) | STRATEGY (W-O) |
| 1. Support from local government | 1. Increase routine meetings between farmers and agricultural extension workers (S1, S2, S4, O1) | 1. Marketing cooperation both in the form of fresh and processed products (W1, O1, O2, O5) |
| 2. Available land | 2. Utilization of available land for potato cultivation | 2. Business development by utilizing capital assistance (W1, O4) |
| 3. Increasing market share | 3. Increased production and quality (S2, S3, O2, O3) | 3. Technology and information improvement (W3, O1, O5) |
| 4. Technological progress | 4. Development of the marketing area |
| 5. The existence of a credit provider |
| TREATS (T) | STRATEGY (S-T) | STRATEGY (W-T) |
| 1. Potato industry is not yet developed | 1. Development of an ongoing partnership system (S1, S2, S3, S4, T1) | 1. Market research and business environment (W3, T1) |
| | 2. Making processed products with potato (T) raw material |

3.2.1. S-O strategy. The S-O Strategy is a strategy designed to use force to take advantage of opportunities. Based on the analysis there are four strategies that can be recommended to be applied by potato farmers in the study area.

a. Increase routine meetings that bridge the government program with farmer groups with the Government Service in accordance with the character of farmers who uphold family, have a strong desire to advance and opportunities for support from the government, it is necessary to utilize institutions through regular meetings. Regular meetings will, of course, facilitate and harmonize the coordination of the programs of the Agriculture Office, the Trade and Cooperative Industry Office and the stakeholders with an increase in farming activities. This strategy certainly requires intermediaries to facilitate routine meetings, including PPL and the head of the farmer group.

b. Increasing production and quality of crops in order to meet consumer needs, potato agribusiness must be able to produce superior and quality products. This will create consumer satisfaction so that consumers will consume continuously. Increasing competitiveness by strengthening production competitiveness must be built through an efficient agribusiness system approach. The characteristic of an efficient agribusiness is a business that is able to produce high-quality goods or services, in
large quantities, guaranteed production continuity with relatively low production costs. With the increase in demand for potatoes from consumers, the district of Tombolo Pao Gowa Regency must be able to adjust these conditions one of them by increasing production.

c. Utilizing vacant land for potato cultivation can be used by farmers to cultivate granola potatoes (Table 4). Utilization of vacant land is expected to increase the amount of potato production in the district of Tombolo Pao.

d. Adding market distribution areas Another strategy that can be taken by utilizing opportunities and strengths of potato agribusiness is to increase the distribution area of the potato market to be wider to several regions.

3.2.2. **W-O strategy.** The W-O Strategy is a strategy used by companies to overcome weaknesses by utilizing existing opportunities. Some of the strategies that can be applied are as follows.

a. Business development by utilizing capital assistance. With the existence of financial institutions, farmers can make capital loans to develop their businesses by utilizing vacant land for cultivation of potatoes or buying superior seeds.

b. Marketing cooperation both in the form of fresh and processed products. The form of marketing cooperation that can be applied to the potato agribusiness system is to utilize the support of the agriculture service through exhibition events held outside the region. Through the event, the agency can promote, both in the form of fresh and processed products, thereby increasing the number of consumers who consume the granola potatoes. In addition to support from the agriculture service, farmers or farmer groups can collaborate with stakeholders to market potatoes outside the region. Farmers can also take advantage of technological gadgets to promote online.

c. Improving production and information technology. With the strategy of improving production and information technology, on potato agribusiness, the development of potato agribusiness in the District of Tombolo Pao can be achieved. Production is a field that continues to grow in harmony with technological developments, because production has a very close intertwined relationship (two-way) with technology. Production and technology need each other. The need for production to operate at lower costs, improve quality and productivity, and create new products has become a force that drives technology to make new breakthroughs and inventions. Production in an agribusiness is the deepest core. Production systems are integral systems that have structural and functional components. In a modern production system, there is a process of transforming value added that converts inputs into outputs that can be sold at competitive prices in the market.

3.2.3. **S-T strategy.** The Strategy S-T is a strategy that uses the power possessed by potato agribusiness in the district of Tombolo Pao, Gowa Regency, is to avoid existing threats. Some of the strategies that can be applied include the following.

a. Develop a partnership system that has been implemented between farmers and farmer groups One of the strengths that is owned by potato farmers in the district of Tombolo Pao is a partnership between members in the farmer groups and with other farmer groups. The partnership that has been formed can be utilized for mutual interests such as meeting the needs of production facilities.

b. Making processed products made from potatoes This strategy was formed against the background of no potato processing industry that uses red potatoes as raw material. Making potatoes as raw material for processed products can produce added value to the commodity of potatoes, which were previously only sold in fresh form.

3.2.4. **W-T strategy.** Market research and the business environment. This is very much needed by potato agribusiness actors in the district of Tombolo Pao, Gowa Regency to find out opportunities for agribusiness and market their products more broadly. The business environment is also very important to minimize the weaknesses that exist in potato agribusiness in the district of Tombolo Pao.

4. **Suggestion**
It is expected that the potato farmers in the district Tombolo Pao will implement the strategy mapping that has been formulated by adjusting the conditions of the potato agribusiness.

References
[1] Departemen Pertanian 2012 *Konsumsi Rata-Rata Per Kapita Per Minggu Beberapa Bahan 2007-2011*
[2] [BPS] Badan Pusat Statistik 2019 *Statistik Sulawesi - Selatan 2019* (Sulawesi Selatan: BPS Sulsel)
[3] [BPS] Badan Pusat Statistik 2019 *Statistik Kabupaten Gowa 2019* (Sulawesi Selatan: BPS Gowa)
[4] Budiman A 2012 *Kebutuhan Bahan Baku Untuk Produksi Olahan Kentang* (Bogor)
[5] Arikunto S 2010 *Prosedur Penelitian Suatu Pendekatan Praktik* (Jakarta: Rineka Cipta)
[6] Hastuti E Y 2008 *Pengaruh Penerapan Sistem Agribisnis Terhadap Peningkatan Pendapatan Petani Sayuran di Kabupaten Boyolali* Tesis (Universitas Dipenogoro: Semarang)
[7] Suratyah K 2006 *Ilmu Usahatani* (Jakarta: Penebar Swadaya)
[8] David F R 2009 *Manajemen Strategi* Sulistio P dan Mahardika H, Penerjemah; Rahoyo S, editor; Edisi dua belas (Jakarta: Salemba Empat)
[9] Rangkuti F 2006 *Analisis SWOT Teknik Membedah Kasus Bisnis* (Jakarta: PT. Gramedia Pustaka Utama)