

Hydroponic Business Diversification: Health Detox Drinks In Improving The Economy And Food Security Of Urban Communities In South Meruya

Annisa Hakim Zamzami¹⁾, Daru Asih²⁾, Shinta Melzatia³⁾, Febry Kurnia Putri⁴⁾,
Ahmad Reza Saputra⁵⁾

¹⁾ annisa.hakim@mercubuana.ac.id, Accounting Study Program, Faculty of Economics and Business, Universitas Mercu Buana

²⁾ Accounting Study Program, Faculty of Economics and Business, Universitas Mercu Buana

³⁾ Accounting Study Program, Faculty of Economics and Business, Universitas Mercu Buana

⁴⁾ Accounting Study Program, Faculty of Economics and Business, Universitas Mercu Buana

⁵⁾ Accounting Study Program, Faculty of Economics and Business, Universitas Mercu Buana

Article Info:

Keywords:
*greenhouse gas emissions,
halal, COGS, marketing,
health detox drinks,
hydroponic vegetables*

Article History:

Received : 07-02-2024
Revised : 08-08-2024
Accepted : 10-08-2024

Article Doi: [10.22441/jam.v10i1.25707](https://doi.org/10.22441/jam.v10i1.25707)

ABSTRACT

One way to reduce greenhouse gas emissions is through reforestation. With limited urban land, reforestation can use the Hydroponic method. In order to increase the selling power of hydroponic vegetables, it is necessary to develop a business by diversifying hydroponic harvests into health detox drinks. This activity is designed holistically to introduce the community to the concept of the importance of business diversification, find product ideas from existing resources, calculate the cost price and selling price, create attractive product packaging with halal guarantees, and market products online. The potential that can be developed in partners includes the knowledge of South Meruya mothers, internet networks, entrepreneurial awareness, increasing demand for healthy food and drinks, especially hydroponic vegetables and health detox drinks. Thus, this activity can improve the economy of urban communities that are the targets of the activity.

How to cite: ZAMZAMI, Annisa Hakim. Hydroponic Business Diversification: Health Detox Drinks In Improving The Economy And Food Security Of Urban Communities In South Meruya. Jurnal Abdi Masyarakat (JAM), 10(1) 60-72. doi: <http://dx.doi.org/10.22441/jam.v10i1.25707>.

INTRODUCTION

The increasing emissions of gases such as carbon dioxide (CO₂), methane (CH₄), dinitro oxide (N₂O), and chlorofluorocarbons (CFC) or known as greenhouse gas emissions, cause solar energy to be trapped in the atmosphere, resulting in global warming. (BMKG, 2021) BMKG stated that the activities that contribute most to greenhouse gas emissions are energy production and use including the use of vehicles and buildings.

In addition to having fewer green spaces, DKI Jakarta is one of the Indonesian provinces with the worst urban pollution levels (BMKG, 2021). Only 34% of DKI Jakarta's territory is covered with green open space, with 33% of the area located in the Seribu Islands, according to data from the Ministry of Environment and Forestry. Not only does West Jakarta City have the fewest green open spaces, but it also continues to have the lowest environmental quality index (KLHK, 2022). With a population of 50,735 and the second-smallest area (2.8 km²) among the subdistricts in Kembangan District, South Meruya Sub-district is one of the subdistricts in West Jakarta. It is mostly composed of residential, mixed, public, and social service zones. Given the large population and air pollution, reforestation is desperately needed. Reforestation plays a crucial role in attempts to lower the rise in greenhouse gases, which are the primary contributors to climate change and global warming.

Though it is still restricted to the Child-Friendly Integrated Public Space (RPTRA) area and the South Meruya Sub-district office, the South Meruya community has started to use the limited yard land to produce agricultural products using hydroponic methods. Modern cities' needs for both indoor and outdoor physical and mental relaxation, an improved urban environment, and food and income security by offering a year-round supply of fresh fruits and vegetables have all been satisfied by planting methods employing hydroponic media (Schnitzler, 2013; Setiany et al., 2023, 2024). Furthermore, Urban Hydroponics reduces environmental pollution, conserves water and space, and decreases the health hazards associated with the harvested food (Keatinge et al., 2011). As a result, South Meruya needs to boost the growth of greening through hydroponic techniques. The South Meruya Community's issue, though, is that it's still challenging to market hydroponic produce. Only the Child-Friendly Integrated Public Space visitors and other Family Welfare Empowerment administrators purchase the current crop in the form of veggies. When selling hydroponic veggies to the market, partners remark that the cost is higher than that of traditional vegetables. This is the reason why Partners aren't continuing to develop hydroponic plants.

A commerce must keep up with the quick changes within the advertise, to secure a economical competitive advantage. In the event that a business is less promising, seeking out for other commerce openings may be a choice regularly taken by business visionaries. In any case, taking off the current trade and changing it into a totally unused trade is an nearly inconceivable choice in terms of money related and vital viewpoints. Instep, commerce expansion is recognized as an imperative procedure for maintainable competitiveness (Mun et al., 2019).

One of the item diversifications from hydroponic gather is vegetable juice drinks for detox needs. Hydroponic vegetables are potential items, in 2017 advertise request expanded from 10% to 20% (Asih et al., 2022; Prasojo, 2017). Typically too backed by the post-covid-19 widespread conditions, people's ways of life have changed somewhat which has brought about in market demand expanding by more than 40%. Usually since in its support it does not utilize pesticides which are great for wellbeing. So, by expanding the trade from at first as it were offering crude vegetables, including a juice commerce line (vegetable juice) can grow the advertise for South Meruya Accomplices . In addition, this can also increase food security and family income after the economic crisis due to the covid-19 pandemic. Thus, greening in the South Meruya area will be more optimal if the hydroponic vegetable market is wider.

Diversification and Added Value

The notion of diversification was initially presented by Ansoff in his 1957 publication "Strategies for Diversification" (Ansoff, 1965; Le, 2019). Diversification is a business strategy aimed at entering new markets with new products, implemented when a company reaches a specific stage of growth to ensure prolonged development and increased profitability. Company expansion can be categorized into four directions: 1) expanding the existing market; 2) introducing new products; 3) marketing original items in distinct new markets; 4) creating new markets and launching new products. Among the four types of firm growth, the fourth is diversification activities.

In addition, Panrose in 1959 (Le, 2019; Nicolai, 1997; ZHOU, 2011) stated that diversification is not only reflected in the increase in the number of variations of end products in the industry, but also in vertical integration. This means that companies that develop new products must be based on the original model or previous products, so that major changes have been made both in the model and distribution of the product. Thus, the definition of product diversification according to Penrose is different from the industrial diversification proposed by Ansoff.

Chandler (Le, 2019) explains the concept of diversification in "Strategy and Structure—The Historical Stage of American Industrial Enterprise Development" stating that the result of diversification is an increase in the Company's final product line. Adjusting the Company's organizational structure can increase the success rate of diversification. The organizational structure is adjusted to the Company's strategy adjustments.

M. Gort Gault (Le, 2019) contends that diversification entails a company's expansion into new markets distinct from its initial market, with the quantity of new markets progressively rising. Richard P. Rumelt (Rumelt, 1982) asserted that diversification, with constrained resources and capabilities, entails undertaking new endeavors connected to its core activity. Rummet asserted that related and dominant diversified companies exhibit strong performance, whereas poorly performing companies engage in unrelated product diversification. This is attributed to the enhancement of core capabilities and the utilization of diverse resources; limited diversification within related industries enhances company performance, while excessive diversification diminishes synergy and adversely affects economic performance.

According to Resource-Based Theory (Le, 2019; Nicolai, 1997), diversification relies on the process of diverse economic organization through the use or creation of assets to attain expansion and competitive advantage. Diversification enables organizations to achieve broader economies and economies of scale, acquire insights from diverse product markets, and secure stable market advantages, hence facilitating a more efficient utilization of internal resources and a range of expertise and skills across business units.

The primary aim of the Company in adopting a diversification strategy is to enhance competitiveness by broadening its operations. This approach enables the Company to achieve economies of scale, scope, and market power; mitigate non-systematic operational risks; and optimize resource utilization, including production capacity, knowledge management capabilities, and entrepreneurial skills.

Added value is an activity that adds value to raw products by carrying out the production process. Value-added activities have an impact on the economy, namely by adding a product chain from raw materials to finished products (Siregar & Binangkit, 2021). Based on the concept of business diversification and added value, the implementation of this Community Service aims to improve the economy of South Meruya partners by producing hydroponic vegetable processing into high-value products, namely healthy drinks (detox).

The initial stage in business diversification is to identify new prospects that can be pursued by persons now and possess significant future potential. Numerous efforts have been made to discern new business prospects through the methodical analysis of business and technological data. Yoon (Yoon et al., 2015) introduced a methodology for identifying technology and product opportunities that can be developed from the existing business technology portfolio. Seo et al. (2016) suggested a method for assessing the

feasibility of new product development that aligns with the internal technological competencies of the enterprise.

Based on coordination with Partners, it was agreed that the formulation of priority problems to be resolved and followed up were:

1. Agricultural Methods on Limited Land

Partners' limited knowledge and skills in determining agricultural methods on limited land such as Hydroponics.

2. Marketing of agricultural products

- a. Limited knowledge of Partners in marketing hydroponic vegetable products and increasing the added value of a product with processed products.
- b. Limited knowledge of Partners regarding packaging, brands, and halal lists.
- c. Limited knowledge of Partners in using social media to market vegetable and processed vegetable products.

3. Calculation of production costs and determination of selling prices

Limited knowledge and skills of Partners in calculating production costs and determining the selling price of processed hydroponic vegetable products.

METHOD

The initial stage of the Community Service Team, Universitas Mercu Buana conducted a survey in the South Meruya sub-district, West Jakarta, which was willing to become an implementation partner. The discussion with partners aimed to formulate solutions that could be implemented in the implementation of the Community Service program on target. Based on the discussion, the following implementation stages were obtained:

1. The problem of agricultural methods on limited land is still not evenly known by Partners. The method used to overcome this problem is to provide socialization and practice of farming using hydroponic media.
2. The problem of creativity and innovation in marketing vegetable products which is still limited in the form of vegetables. Harvested vegetables are only sold to visitors to the Child-Friendly Integrated Public Space and also mothers who manage the Family Empowerment and Welfare hydroponic management. The method used to overcome this problem is to provide socialization of product diversification business strategies by providing added value to the original product, namely processing it into healthy drinks. In addition, the community

service team provides practice in processing healthy drinks from the results of the hydroponic vegetable harvest.

3. The problem of food and beverage product requirements that must include halal information is not yet known by Partners. The method to overcome this problem is to provide technical socialization of making halal certificates for food and beverage products.
4. The Partners are now unaware of how to accurately assess the cost price and selling price of healthy drinks. The appropriate approach to address this issue is to offer instruction on calculating the cost price and selling price of healthy beverages.
5. The Partners are now unfamiliar with the marketing of healthy drink products, leading to uncertainty regarding the swift and precise promotion of these items. The solution to this issue is to facilitate socializing around the utilization of social media for promoting healthy beverage goods. Utilizing social media as a direct platform for product marketing.

RESULT AND DISCUSSION

Implementation of Activities

The implementation of community service activities was carried out at "Menara" the Child-Friendly Integrated Public Space, South Meruya Sub-district with two methods, namely the delivery of materials and joint practice on the use of hydroponic planting methods, diversification of healthy beverage processing businesses, halal certification, calculation of basic prices, and product marketing.

1. Hydroponic Training and Business Diversification Socialization

The implementation took place at the "Menara" the Child-Friendly Integrated Public Space, South Meruya Sub-district on Friday, July 28, 2023 at 08.00-11.45 WIB. Participants who attended this activity were 30 people from the South Meruya Community. The first material was guided by Mr. Ahmad Sugiarto, which explained the advantages of using hydroponic planting media in urban areas, the use of used bottle media, the use of simple hydroponic media, the use of nutrients, and plant care. After delivering the material, Mr. Sugiarto also practiced sowing vegetable seeds to the participants. The second material regarding business diversification was explained by the chief executive. This socialization aims to expand the community's business ideas that vegetables can be increased in added value into healthy drinks.



Figure 1. Group Photo of PKM Team and Participants



Figure 2. Hydroponic Training and Business Diversification Socialization Activities

2. Transferring Seeds to Hydroponic Media

Two days after sowing the seeds, the pak choy seedlings are ready to be transferred to the hydroponic media located in the green alley, implementing partners on Sunday, July 30, 2023. At 07.00 WIB.



Figure 3. Transferring Seedlings to Netpot

3. Practice Making Healthy Drinks, Socialization of Making Halal Certificates, Calculation of Costs and Selling Prices, and Marketing

The practice of making healthy drinks and socialization was carried out at the "Menara" the Child-Friendly Integrated Public Space, South Meruya sub-district on Friday, August 25, 2023. Starting at 08.00-11.45 WIB. Before the event began, the

Team and implementing partners first harvested pakcoy vegetables in Gang Hijau at 7.00-08.00 to be processed into healthy drinks at the "Menara" the Child-Friendly Integrated Public Space. The number of participants in the implementation of the practice and socialization from the South Meruya Community was 30 people. The event began with the practice of making healthy drinks and putting them in ready-to-sell packaging, then technical material on making halal certificates, calculating the cost price and determining the selling price of products, and ending with product marketing material with social media.



Figure 4. Pakcoy Vegetable Harvest



Figure 5. Processed Pakcoy Vegetable Products into Healthy Drinks "Mixur"



Figure 6. Socialization of Halal Certificate Making Techniques

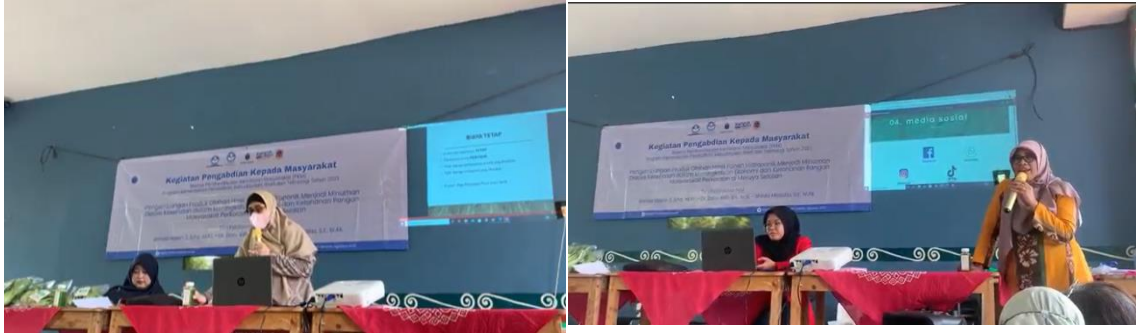


Figure 7. Socialization of Calculating Production Costs, Selling Prices, and Marketing



Figure 8. Group Photo at the End of Community Service Activities

Results of Target Evaluation and Output Achievements

The survey had 11 statements, on a 4-point scale: 1 for strongly disagree, 2 for disagree, 3 for agree, and 4 for highly agree. Table 1 indicates that 70 percent of Partners express high satisfaction with the benefits of the provided materials. Additionally, 63% of Partners assert that the socialization offered enhances understanding and collaboration between the Community Service Team and Partners, significantly impacting them. Nevertheless, Partners are uncertain regarding the efficacy of the strategies offered by the Community Service Team in enhancing their production capacity. This may be affected by many factors, like working capital and the target market. Consequently, we persist in the socialization process by offering support and conducting regular evaluations. The Community Service Team aims to proceed with the subsequent activity to present other business concepts that can be cultivated by MSMEs, hence facilitating further business opportunities.

Table 1. Results of Participant Satisfaction Survey

| No | Description | Strongly agree | Agree | Disagree | Strongly disagree | Min | Max | Mean | ST D |
|----|---|----------------|-------|----------|-------------------|-----|-----|-------|------|
| 1 | The expertise of the implementation team can solve several community problems. | 0,467 | 0,533 | 0 | 0 | 3 | 4 | 3,467 | 0,5 |
| 2 | The implementation team utilized a faster and easier method | 0,4 | 0,6 | 0 | 0 | 3 | 4 | 3,4 | 0,5 |
| 3 | Training is crucial in cultivating communal knowledge. | 0,633 | 0,367 | 0 | 0 | 3 | 4 | 3,633 | 0,5 |
| 4 | The supplied content is really beneficial as an educational resource for the community. | 0,7 | 0,3 | 0 | 0 | 3 | 4 | 3,7 | 0,5 |
| 5 | The training provided can provide opportunities to increase community income | 0,467 | 0,533 | 0 | 0 | 3 | 4 | 3,467 | 0,5 |
| 6 | The training provided can increase community knowledge | 0,633 | 0,367 | 0 | 0 | 3 | 4 | 3,633 | 0,5 |
| 7 | The training provided can improve community product output. | 0,4 | 0,6 | 0 | 0 | 3 | 4 | 3,4 | 0,5 |
| 8 | The training provided provides encouragement to the community to do it in the future. | 0,533 | 0,467 | 0 | 0 | 3 | 4 | 3,533 | 0,5 |
| 9 | The training offered can enhance societal quality. | 0,467 | 0,533 | 0 | 0 | 3 | 4 | 3,467 | 0,5 |
| 10 | The collaboration with the Implementation Team is advantageous for the community. | 0,633 | 0,367 | 0 | 0 | 3 | 4 | 3,633 | 0,5 |
| 11 | The partnership with the Implementation Team achieved the collaboration objectives. | 0,333 | 0,667 | 0 | 0 | 3 | 4 | 3,333 | 0,5 |

The video of the implementation of the community service grant can be accessed on the YouTube page of the Community Service Center of Mercu Buana University with the link <https://youtu.be/Z6lZ7TxSbOw>

CONCLUSION

The partners of South Meruya have employed the restricted yard space for agricultural purposes, cultivating vegetables through hydroponic techniques. This technology addresses the requirements of contemporary urban areas, including (1) facilitating physical and psychological relaxation in both indoor and outdoor settings; (2) enhancing the urban environment; and (3) ensuring food security and generating money through the provision of diverse fresh fruits and vegetables. Nonetheless, South Meruya Partners faces challenges in marketing hydroponic veggies. They exclusively sell vegetables to neighbors who express dissatisfaction with competitive pricing of conventional products. The Community Service Team of Mercu Buana University offers training on business diversification utilizing hydroponic vegetable products, including health detox beverages made from vegetable and fruit juices, methods for obtaining halal certification, cost and selling price calculations, and product marketing strategies. The counseling occurred at the Menara Child-Friendly Integrated Public Space in South Meruya, comprising two sessions on July 28, 2023, and August 25, 2023. This initiative positively influences South Meruya Partners in establishing a business based on hydroponic cultivation. The attainment of Community Service objectives indicates general acceptance by Partners; however, to get optimal results, ongoing monitoring, evaluation, and support are essential.

SUGGESTION

The implementation of this socializing activity necessitates improvement to educate South Meruya Partners who have not engaged in previous training. Many partners in specific regions of South Meruya lack awareness of the principle of business diversification. Moreover, it is imperative to provide several business diversifications derived from hydroponic vegetable yields, allowing Partners to choose among these alternatives.

ACKNOWLEDGEMENT

On this occasion, the Community Service Implementation Team extends its gratitude to the entities that enabled the activities, including the Ministry of Education, Culture, Research, and Technology, the internal components of the University through the 2023 Community Partnership Empowerment Grant program, the Research and Community Service Institute of Mercu Buana University, and the South Meruya Sub-district Partners for their collaboration in executing the service. The conducted community service activities are anticipated to be advantageous.

REFERENCE

- Ansoff, H. I. (1965). Strategies for diversification. *Harvard Business Review*, 5(2), 113–124. [https://doi.org/10.1016/0024-6301\(72\)90048-9](https://doi.org/10.1016/0024-6301(72)90048-9)
- Asih, D., Soelton, M., Tkhorikov, B. A., Ratnawati, K., Puspaningrum, A., & Ramli, Y. (2022). SUSTAINABLE PRODUCT : ENDLESS CAMPAIGN FOR A HEALTHY LIFE. *International Conference on Community Development*, 4(1), 334–338.
- BMKG. (2021). Aktivitas Manusia sebagai pendorong utama peningkatan Gas Rumah Kaca. *Buletin Gas Rumah Kaca*, 1(1), 4–9.
- Keatinge, J. D. H., Yang, R. Y., Hughes, J., Easdown, W. J., & Holmer, R. (2011). The importance of vegetables in ensuring both food and nutritional security in attainment of the Millennium Development Goals. *Food Security*, 3(4), 491–501. <https://doi.org/10.1007/s12571-011-0150-3>
- KLHK. (2022). Profil Indeks Kualitas Lingkungan Hidup.
- Le, H. (2019). Literature Review on Diversification Strategy, Enterprise Core Competence and Enterprise Performance. *American Journal of Industrial and Business Management*, 09(01), 91–108. <https://doi.org/10.4236/ajibm.2019.91008>
- Mun, C., Kim, Y., Yoo, D., Yoon, S., Hyun, H., Raghavan, N., & Park, H. (2019). Discovering business diversification opportunities using patent information and open innovation cases. *Technological Forecasting and Social Change*, 139(September), 144–154. <https://doi.org/10.1016/j.techfore.2018.11.006>
- Nicolai, J. (1997). The Resource-Based Perspective: An Assessment and Diagnosis of Problems (No. 97-1).
- Prasojo, M. (2017). Peluang Bisnis Sayuran Hidroponik dan Strategi Pemasarannya – Unsurtani.com. *Unsurtani.Com*. <https://unsurtani.com/2017/04/peluang-bisnis-sayuran-hidroponik-dan-strategi-pemasarannya>
- Rumelt, R. (1982). Diversification Strategy and Profitability. *Strategic Management Journal*, 3(4), 359–369.
- Schnitzler, W. H. (2013). Urban hydroponics for green and clean cities and for food security. *Acta Horticulturae*, 1004(September 2012), 13–26. <https://doi.org/10.17660/ActaHortic.2013.1004.1>
- Seo, W., Yoon, J., Park, H., Coh, B. youl, Lee, J. M., & Kwon, O. J. (2016). Product opportunity identification based on internal capabilities using text mining and association rule mining. *Technological Forecasting and Social Change*, 105, 94–104. <https://doi.org/10.1016/j.techfore.2016.01.011>
- Setiany, E., Hidayah, N., Briandana, R., Hidayat, M. S., Raihan, A. D., & Putri, T. A. (2023). Peningkatan Perekonomian Keluarga Urban Melalui Budidaya Sayur Hidroponik. *Junal Abdi Masyarakat*, 9(September), 1–9.
- Setiany, E., Utami, T. B., Chairunesia, W., Prakoso, B. A. T., & Juniarsih, C. (2024).

- Budidaya Sayur Hidroponik Menuju Ketahanan Pangan dan Kewirausahaan Produk Organik di Meruya Selatan. *Jurnal Abdi Masyarakat (JAM)*, 9(2), 103–110. <https://doi.org/10.22441/jam.v9i2.24627>
- Siregar, D. I., & Binangkit, I. D. (2021). Business Value-Added Within the Circular Business Model: a Multiple Case Analysis. *Jurnal Aplikasi Bisnis Dan Manajemen*, 7(1), 231–239. <https://doi.org/10.17358/jabm.7.1.231>
- Yoon, J., Park, H., Seo, W., Lee, J. M., Coh, B. youl, & Kim, J. (2015). Technology opportunity discovery (TOD) from existing technologies and products: A function-based TOD framework. *Technological Forecasting and Social Change*, 100, 153–167. <https://doi.org/10.1016/j.techfore.2015.04.012>
- ZHOU, Y. M. (2011). SYNERGY, COORDINATION COSTS, AND DIVERSIFICATION CHOICES. *Strategic Management Journal*, 32, 624–639. <https://doi.org/10.1002/smj>