

Women Empowerment, Urban Farming and Food Security: Learning from PRI MAPAN Program

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ABSTRACT : Massive industrialization has increased pressure on agricultural land due to conversion, including what happened in Cilegon City. If there is no anticipatory action, food security will be vulnerable. Responding to industrialization, which has an impact on food vulnerability in Cilegon City, Pertamina Patra Niaga Fuel Terminal Tanjung Gerem is implementing a community empowerment program that mainstreams the role of women in utilizing small urban land for food production activities in the PRI Mapan program. Using the participatory rural appraisal (PRA) concept, this paper aims to explain the program implementation strategy. In addition, through this paper, we conduct a desire compass analysis and social return on investment (SROI) to measure the program's impact. As a result, the PRI Mapan program positively impacted efforts to realize food security in urban areas through urban farming activities, as evidenced by an increase in social, economic, welfare, and environmental aspects and an SROI index of more than 1.

KEYWORD: *women empowerment, urban farming, food security*

I. INTRODUCTION

Cilegon is a city at the western tip of Java Island and is the gateway to Sumatra Island. This city is known as one of the industrial cities in Banten Province, where heavy industrial areas are developing, including the national steel industry PT. Krakatau Steel is the center of petrochemical activities and other services industries (Sulaiman, Saefuddin, Syarif, & Zain, 2008). In 2021, 88 large and medium industries will be recorded and contributing 55% of Cilegon City's GRDP in 2024 (BPS-Statistics Cilegon Municipality, 2024).

One of the implications of massive industrialization is the decline in agricultural productivity due to land conversion. Industrial investments often entail the conversion of agricultural land into industrial zones. This transformation alters the landscape, leading to the loss of productive agricultural land. The shift from farming to industrial areas can have significant environmental and socioeconomic consequences (Debela, et al., 2020). In the context of Cilegon, industry dominance over agriculture is very clearly visible in the labor sectoral distribution. Based on data from the Cilegon Statistics Agency in 2024, the number of workers aged 15 years and over is spread across three primary industries, namely manufacturing at 29.2% (56,035), services at 67.2% (129,017), and agriculture at the very sparse number with only 3.6% (7,015).

The small number of workers in the agricultural sector signals vulnerability in food availability. One reason for this land conversion due to industrial expansion and urbanization. Rapid urbanization means cities face escalating challenges in ensuring food security for their populations. Urban areas are characterized by increased food demand, limited agricultural space, and vulnerability to supply chain disruptions (Amorim, et al., 2019).

This condition then becomes a problem in food production efforts in urban areas, which have been expanded by industrialization. Farmers in urban areas face more challenges compared to farmers in rural areas. The constraints that challenge urban farmers fall into several categories: finding land, water, healthy soil, and funding (McCauley, 2021). If a solution is not found for this condition, the threat of food shortages will become increasingly accurate and imminent.

One effort to anticipate food vulnerability due to industry-induced pressure on land is to promote urban farming programs. Implemented urban agriculture must also involve the participation of parties who can be empowered in food production efforts, one of which is housewives in urban areas. Urban agriculture is an important effort because it is crucial in improving food security through the diversity of food produced by urban

farmers (Abdoellah et al., 2023). With little land in their backyards—or without any backyard at all—aspiring urban farmers should fret not, as they can grow various vegetables with limited space at home (The Jakarta Post, 2020).

In response to food issues and the expansion of industrialization in Cilegon City, Pertamina Patra Niaga Integrated Terminal Tanjung Gerem, then carried out community empowerment efforts that focused on community food production efforts through an urban farming program called PRI MAPAN. PRI MAPAN, an acronym for Independent Women Achieving Food Security, is a community empowerment program whose main activity is integrated urban farming and makes women the main subjects/actors.

The main goal is to increase women's role in creating food security, starting from the domestic area of the household. This program aims to create open land, increase creativity, empower women group members, foster dynamics and leadership for group members through deliberation, discussion, and program preparation activities, and can be used as a learning forum for the surrounding community.

Urban Farming is carried out in a modern hydroponic (water-based) model without using soil, emphasizing the fulfillment of plant nutrition implemented by the Cahaya Mandiri Women's Farming Group (KWT). KWT Cahaya Mandiri consists of 30 women who work as Housewives (IRT). In the business-as-usual (BAU) process, KWT carries out routine cultivation, including upstream activities such as seeding, planting, and harvesting. Apart from that, this group also carries out downstream activities such as sorting, packaging, and sales processes in a sustainable manner.

This paper aims to explain the strategy for implementing the women's empowerment program carried out by Pertamina Patra Niaga Fuel Terminal Tanjung Gerem through the PRI MAPAN program to realize food security in urban areas. It will also find out the impact of the program through two measurement methods: the sustainability compass and social return on investment (SROI).

II. METHODS

Pertamina Patra Niaga Fuel Terminal Tanjung Gerem implements the PRI MAPAN women's empowerment program using the participatory rural appraisal (PRA) method. PRA is a theory that Robert Chambers originally put forward. In general, Chambers argued that participatory Rural Appraisal (PRA) theory emphasizes the importance of involving local communities in assessing and planning rural development initiatives. By engaging community members as active participants, PRA seeks to harness local knowledge, perspectives, and priorities, ultimately leading to more contextually appropriate and sustainable development outcomes (Chambers, 1994).

The Participatory Rural Appraisal (PRA) technique incorporates community participation in all community empowerment programs. This technique develops the preceding way of critique, asserting that community development is frequently utilized solely as an object, not a subject. This method makes the community not only an object that receives development but also becomes the subject of development and is actively involved in program design in the planning, priority setting, budgeting, implementation, and utilization of program results (Kristianto & Zuwanita, 2022).



Picture: Critical components in the participatory rural appraisal method as described by Koralagama, et.al (2007) (Kristianto & Zuwanita, 2022)

After implementing the program using the PRA method, program results are measured using several methods. The first is with a sustainability compass. The compass sustainability method measures how much the program impacts four directional elements: the environment, social, economic, and community welfare. An empowerment system is sustainable when it has positive and equitable outcomes in all environmental, social, and economic aspects. The Compass defines sustainability scores for four societal goals underpinned by areas of concern (Hebinck, et al., 2021).

The Sustainability Compass originates in the need to present an alternative way to deal with issues that are characterised by high complexity and uncertainty. This method designed as a social learning process, bringing together existing knowledge and grassroots experience to highlight reliable sustainability practices. It encourages active participation and competition, rather than simple compliance. This method could reduce bureaucratic burdens and encourage bottom-up, culturally sensitive approaches (Sajeva, et al., 2024).

Besides the sustainability compass, the impact of the program measurement is also through social return on investment (SROI). SROI is an approach to understanding and managing the impact of social, economic, and environmental values created by an activity or organization. (Aufklara Institute, 2023). According to Cooney & Lynch-Cerullo (2014), one of the advantages of this method is that it can be used to improve management performance in implementing various programs whose outcomes are not visible. The SROI calculation was developed based on accounting principles and cost-benefit analysis that calculate social impact in monetary units to illustrate value creation that can be widely understood (Ririh, Wicaksono, Berliandaldo, & Ajie, 2021).

III. RESULT AND DISCUSSION

The PRI MAPAN women's empowerment program, carried out by Pertamina Patra Niaga Fuel Terminal Tanjung Gerem, has been running since 2020. Various activities have been carried out to realize food security through urban farming methods that actively involve the community, starting from planning and implementation to impact measurement. In general, this activity consists of two big things: increasing capacity and providing equipment and supplies.

The PRI MAPAN program is implemented by the Cahaya Mandiri Women's Farmers Group (KWT) as the beneficiary, consisting of 30 women who work as Housewives (IRT). In the business-as-usual (BAU) process, KWT carries out routine cultivation, including upstream activities such as seeding, planting, and harvesting. Apart from that, this group also carries out downstream activities such as sorting, packaging, and sales processes in a sustainable manner.

Every activity in this program, from planning to implementation monitoring and evaluation, always involves stakeholders related to the program, including the community, government, and other private sector parties. In addition, systematic implementation records are carried out to determine developments and implementation obstacles to improve the program in the future.

Activities carried out in the PRI MAPAN women's empowerment program include focus group discussions with beneficiaries, training and upskilling agricultural skills for various commodities, namely horticulture and fisheries cultivation, providing assistance with agricultural equipment and tools, testing agricultural products, and marketing. As a result, KWT Cahaya Mandiri has produced commodities and economic value reaching Rp.11,224,000 from superior commodities: kale, corn, long beans, eggplant, and cucumber. These results expanded the program to develop grape commodities, fish cultivation, and eco-enzyme processing..

Sustainability Compass

One indicator of an empowerment program's success is its sustainable impact, which is measured using a sustainability compass consisting of economic, social, community, and welfare aspects. The sustainability compass analysis in the PRI Mapan program can be seen as follows.

Nature

The Cahaya Mandiri Women's Farmers Group has utilized and converted dry land into 600 m² of productive agricultural land and 500 m² of greenhouse space. This contributes to carbon and groundwater absorption due to increasing green open space.

Wellbeing

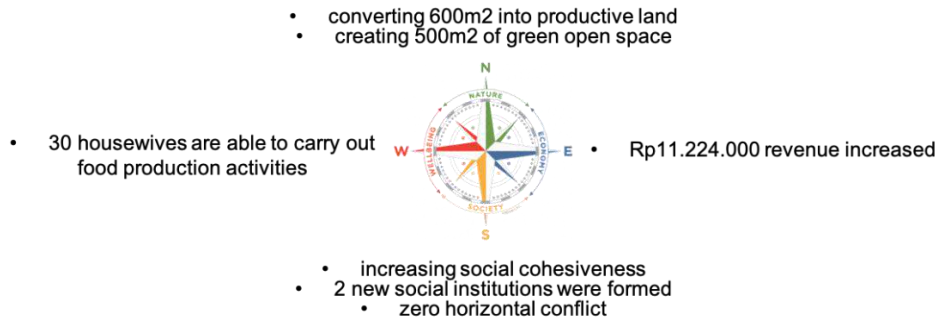
The Urban Farming concept, which utilizes land on a residential scale, has succeeded in employing 30 women's farming group members and contributing to more comprehensive environmental management, such as groundwater conservation and reducing greenhouse gas emissions.

Economy

The PRI MAPAN program has the main benefit of direct economic improvement for its beneficiaries through vegetable cultivation activities on narrow urban land (urban farming). Based on the economic impact study carried out on PRI MAPAN's innovation, there are at least 5 (five) commodities that are superior to the Cahaya Mandiri Women Farmers Group, namely kale, corn, long beans, eggplant, and cucumber, along with their processed derivative products.

Society

The PRI MAPAN Program provides social impacts in the form of increased community cohesiveness, as evidenced by the increase in forums and the absence of horizontal conflict. This innovation also creates two new institutions that did not previously exist, namely the Cahaya Mandiri Women's Farmers Group and the UMKM Forum, Gerogol District, Cilegon City.



Picture: Sustainability Compass on PRI Mapan Program

Besides the Sustainability Compass, SROI measurements are also carried out in the PRI MAPAN program. The aim is to see how a program successfully solves societal problems by measuring its effectiveness using the cost-benefit method. According to Cooney & Lynch-Cerullo (2014), one of the advantages of this method is that it can be used to improve management performance in implementing various programs whose outcomes need to be visible. The SROI calculation was developed based on accounting principles and cost-benefit analysis, which calculates social impacts in monetary units to illustrate value creation that can be widely understood.

Based on data from the SROI Measurement Report on the Pertamina Patra Niaga Fuel Terminal Tanjung Gerem CSR Program, 2023 Social Return on Investment (SROI) measurements will be carried out in the PRI MAPAN Program. The SROI results show a figure of 1.78. This result shows that every rupiah of program costs produces a positive change worth IDR 1.78 or more than one times the program costs. Based on positive SROI figures of more than one, the PRI Mapan program is socially feasible.

The results of the SROI assessment of the PRI Mapan Program can be concluded as follows:

1. The PRI Mapan SROI value, implemented for three (3) years from 2021 to 2023, has increased. The development of the SROI value in 2021 will be 1.27, in 2022 1.50, and 2023 it will be 1.78. Based on the SROI value, the PRI Mapan Program is categorized as successful and worthy of implementation and continued because the SROI value is more than (>1).
2. Overall, PRI Mapan's benefits are more significant than its investment value. An SROI value of more than one also indicates that the program being implemented has reached the breakeven point (BEP) in its first year.
3. PT Pertamina Patra Niaga Fuel Terminal Tanjung Gerem's implementation of the PRI Mapan Program has had a positive impact on the beneficiaries, namely the KWT Cahaya Mandiri Group.

IV. CONCLUSION

The PRI MAPAN (Independent Women Achieving Food Security) program is a community empowerment program carried out by Pertamina Patra Niaga Fuel Terminal Tanjung Gerem as an effort to create community independence, especially women, through increasing capacity and utilizing small areas of land for food production activities. Through the participatory rural appraisal strategy, this program can benefit the community, resulting in economic improvement for the beneficiaries, efficient use of space, and improvement in environmental quality. PRI MAPAN program play a role in food security campaigns in urban communities, especially in the Gerem Village area, Kota. Cilegon as shown by sustainability compass analysis and social return on investment measurement.

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