

Research Article

Utilization of Media and Institutional Support for Urban Farming in Pekanbaru City

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ORCIDYulia Andriani: <https://orcid.org/0000-0002-8807-6637>**Abstract.**

Urban farming is important in supporting food security in urban areas. This study aims to identify the use of communication media in implementing urban farming and supporting institutions in the application of urban farming. This research was conducted using a survey method with samples selected in tiers representing each extension institution of farmer women groups. Furthermore, data were gathered from interviews and FGDs. The results showed that accessing information and communication behavior was in the excellent category with a score of 4.65. There are different types of facilities that are currently used by farmers to access information, namely smartphones where the extension workers always provide information related to farming, and printed extension media such as brochures, flyers, and books related to vegetable farming. Farmer knowledge about information sources is also in an excellent category. They know the types of information sources and how to get information according to their needs that comes from reliable and accurate sources. Farmers received full support from local leaders and the government through the food crops and fisheries office of the city of Pekanbaru with regular counseling held by extension workers, and socialization related to urban farming.

Keywords: extension media, institution support, urban farming, women farmer group

1. Introduction

Recently, urban farming has been receiving increased attention due to several factors. With a larger portion of the world's population living in urban areas, the environmental impact of traditional agriculture is becoming a growing concern. Additionally, food insecurity, particularly access to fresh and healthy food options, remains a significant challenge. Urban farming has been suggested as a possible solution to these challenges, by producing food in high-density urban areas, reducing transportation costs, connecting people more directly to their food sources, and making efficient use of urban spaces [1].

The application of urban farming is one of the efforts that can be made by the government to meet food needs in urban areas. Urban farming does not only include

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cultivation activities but more than that, including the stages of the post-harvest process and distribution. Several studies have shown that urban farming can support family food security by maximizing limited land use to be productive [2]–[4]. In addition, urban farming deals with several issues related to the economy, environment, climate change, and the availability of food and energy [5], [6].

In general, urban areas do not have special agricultural land because the existing land has been used up for settlements, public spaces, city parks, roads, and various other land functions besides agriculture. Currently, almost all urban areas in Indonesia still depend on food supplies including rice, vegetables, and fruits from rural or suburban areas, some materials are imported from other countries. The urgency of urban farming is increasing with the rapid growth rate in urban areas.

Therefore, urban farming has excellent opportunities and prospects to develop agribusiness-based and environmental farming. Several factors greatly impact the yield of a farm. Among these factors, farm size, inputs, rice variety, and irrigation play a pivotal role. Farm size determines the amount of land available for cultivation, and consequently, the total output that can be generated. Inputs such as fertilizers, pesticides, and herbicides are crucial for enhancing the quality and quantity of crops produced [7]. From urban farming, several benefits are obtained, including the community's ability to produce food that can be consumed alone and can even be sold in limited quantities. The limited land use in urban areas is expected to empower the community, especially women. The Women's Farmer Group (WFG) provides opportunities for women to participate in improving agriculture. WFG can have a positive impact on members to improve family welfare and increase the knowledge of farm women in agriculture, fisheries, and animal husbandry [8]. Women farmers' numbers are continuing to increase, as well as their prominence in conversations within sustainable agriculture [9].

The role of women in agriculture is closely related to family food security. The sustainability of the implementation of urban farming depends on the active participation of its members. The implementation of urban farming, one of which is through the implementation of the Sustainable Food House Area (KRPL) program, shows that active members show satisfaction with the group [10], [11]. Some factors that influence the role of women in urban farming include education level, group activity, social status, and land ownership [12].

Activeness in groups requires quick and precise access to information. Access to information is important for farmers to make decisions related to cultivation to post-harvest. Access to information can be formal or informal sources. One of the access to information for urban farming in Pekanbaru City is provided by the Agriculture and Fisheries Office of Pekanbaru City through three Agricultural Extension Centers (AEC), namely AEC Tampan, AEC Kulim, and AEC Rumbai. Based on this background, the purpose of the study is to identify the use and utilization of communication media and supporting institutions in implementing urban farming in Pekanbaru City.

2. Research Methods

This research was conducted in Pekanbaru City, using a survey method. The population in this study is all peasant women who are members of WFG who carry out urban farming in Pekanbaru City. With an approach based on AEC, the population in the cluster, from each AEC, WFG is selected who is active in urban farming and receives assistance from AEC. Samples were taken with non-probability techniques, namely purposive sampling techniques, taken by all WFG administrators and group members so that 117 peasant women were obtained. The data in this study are primary data and secondary data. Primary data were obtained from interviews, observations, and in-depth interviews with administrators and extension workers at AEC. Secondary data were obtained from BPS, the Agriculture and Fisheries Office of Pekanbaru City, and AEC.

The first research objective on the use of communication media is identified with several indicators, namely the media used in communicating, the extension media used, farmers' knowledge about information sources, the availability of information sources, and the suitability of information to the needs of farmers (Table 1). The second goal of institutional support is identified with leadership variables leadership influence and social system support.

Furthermore, from this indicator, several questions are raised in the questionnaire and then the answers are made based on the scale given. A rating scale is used using Likert's summated rating (LSR) from a score of 1 to 5 which indicates very poor to very good answers.

To find out the range of scales used:

$$Category = \frac{Score\ Maximum - Score\ Minimum - 0,01}{Number\ of\ Categories}$$

TABLE 1: Variable and indicator.

No	Variable	Indicator
1	Media access and communication behavior	Media used in communicating
		Extension media
		Farmer knowledge of sources of information
		Availability of information sources
		Suitability of information to the needs of farmers
2	Institutional support	Leadership influence
		Social system

Thus, a range of scales of peasant women's perceptions of media use and institutional support in urban farming was obtained (Table 2).

TABLE 2: Score categories based on scale range.

Category	Score
Excellent	4,20-5,00
Good	3,40-4,19
Good enough	2,60-3,39
Not good	1,80-2,59
Very unfavorable	1,00-1,79

3. Results and Discussion

3.1. Media access and communication behavior of peasant women in urban farming

The use of media is seen from the use of media in communicating, the use of media in the extension of farmers' knowledge about information sources, the availability of information sources, and the suitability of information to the needs of farmers (Table 3).

The use of media by peasant women received a score of 4.70 in the very good category. The media used in communicating by peasant women are smartphone media, and social media namely Facebook and WhatsApp. Usually, farm women communicate to agree on extension times, and regular or special meetings, and discuss the types of crops to be planted, facilities, and infrastructure to be used. 7.40% of farm women stated that they only use smartphone media to call and discuss via WhatsApp, and 93.2%

TABLE 3: Media access and communication behavior.

No.	Media access and communication behavior	Score	Category
1	Media used in communicating	4,70	Excellent
2	Extension media	5	Excellent
3	Farmer knowledge of sources of information	4,56	Excellent
4	Availability of information sources	4,67	Excellent
5	Suitability of information to the needs of farmers	4,30	Excellent
Average		4,65	Excellent

stated that in addition to using smartphones for calling and discussions on WhatsApp, they also use social media Facebook to communicate. Most smartphones (98%) are privately owned. The remaining 2% of farm women who do not have smartphones, only use regular mobile phones and in some cases, they use smartphones belonging to their children or husbands if needed.

Counselling is routinely carried out every week by extension workers. Extension media commonly used by extension workers include live lectures, brochures, leaflets, and videos. All women stated that the counselling media used by extension workers was very good with a score of 5. Extension workers use the head of WFG as their extension. The head of WFG actively communicates with extension workers and conveys the information obtained to its members. The implementation of counselling is usually based on a mutually agreed schedule because WFG members have other activities, namely housewives, and businesses, and some work as employees and teachers. So, the flexible and mutually agreed counselling time is highly appreciated. This is under the results of Obianevo's research which states that flexible extension time helps women farmers to cope with their many household chores [13].

Not only knowledge from the implementation of counselling, peasant women who are members of WFG also actively seek information from other sources. The ease of access and availability of smartphone media greatly facilitates access for farm women to find information related to urban farming. Score 4.56 in the very good category. Only 3.70% of farm women stated that they knew many sources of information about urban farming, but often the information obtained was not what they needed and they could not choose accurate and competent sources of information, then 37.04% of farm women stated that they could already find and choose reliable and competent sources of information, However, due to the large amount of different information, they have

difficulty determining which one suits their needs. Most farmers (59.26%) are women farmers who have been able to determine reliable, competent sources of information as well and they can choose which information they need according to the conditions of their land and crops.



Figure 1: Cauliflower plants in the yard of the farmer's house.

At the location of their farm, there is an institution providing information about urban farming (Figure 1). A score of 4.67 was obtained in the very good category. The availability of information providers around them, namely the head of the farmer group. 29.63% of women farmers stated that the head of the farmer group actively sought information related to urban farming and shared the information with WFG members. And 70.37% of farmer women also actively seek information on their own and share information with other WFG members. Despite the significant role of peasant groups in collective action for production and marketing, the main factor influencing the role of groups is the active participation of group members. Descriptive results show relatively high levels of social, economic, institutional, and environmental benefits arising from participation in such groups [14]. The study added that the participation of farmer group members was also influenced by the chairman's education level, members' knowledge of the group's agenda, and the frequency of meetings [15]

The suitability of information to the needs of farmers received a score of 4.30 with the appropriate category. 7.41% of women farmers stated that the information they got was

incomplete and not easy to understand even though it was following the circumstances of their farm. 37.04% stated that the information they got was complete, according to the circumstances of their farm, easy to understand and quickly obtained and 55.56% of farm women stated that it was difficult to find information when urgent.

3.2. Institutional support for urban farming

The institutional support in question is a local institution, which is seen from the indicators of leadership influence and social system. There is farmers group. One effective way to enhance learning and promote cooperation between groups is to utilize the group as a classroom for procurement of production facilities. This can help in initiating business opportunities for product processing and further strengthen inter-group collaboration [16].

TABLE 4: Institutional support.

No.	Institutional support	Score	Category
1	Leadership influence	4,81	Very influential
2	Social system	4,81	Very supportive

The leadership referred to in this study is the leadership of the chairman of WFG. In the leadership influence indicator, a score of 4.81 was obtained with a very influential category (Table 4). 18.52% of peasant women stated that there was support from the WFG chairman in motivating WFG members, searching, and raising ideas about technological advances in urban farming. The Chairman of WFG also helps facilitate its members to find solutions to the problems faced. This is under what is stated [17] which states that farmer groups are formed to solve farmers' problems that they cannot solve on their own. This is one of the advantages of the female farmer group compared to the male farmer group. In general women's farming group has unique characteristics compared to the men's farming group, where the bonding and activities are often more intense (Figure 2) [18].

Organizing individual farmers into farmer groups is a proven strategy to significantly boost smallholder farmer competitiveness [19]. Farmer groups can be an important institution because they can increase productivity, and income [20]. In addition, farmer groups can also increase access to information technology, and capital. Farmer groups play an important role in helping member increase their access to support of information, capital, and technology; bring benefits to members; and partly promote production,



Figure 2: Institutional support.

enhance productivity, and increase income [21]. WFG leaders try to build relationships with external parties synergistically, for example through extension workers to get access to post-harvest processing information and get relationships with seed providers and traders. Several WFGs in AEC Rumbai and AEC Tampan have partnered with the Faculty of Agriculture UNRI in community service programs.

The close relationship between members in WFG is because of their adjacent residences, so intense communication is carried out. The implementation of agricultural business in this case urban farming is also carried out around their yards. There are also peasant women who take advantage of the vacant land around them. WFG members benefit from the support of this social system. In addition to the chairman of WFG, formal leaders such as the chairman of RT, and RW also support the implementation of urban farming. In several visits from government parties such as sub-districts, sub-districts, as well as from other government agencies, WFG is always involved and is also considered as the advantage and potential of the environment. Research from Deepika Verma showed that in women's farming vegetables reveal that cosmopolitanism plays an important role in agricultural development. He stated that farmers need support in solving their farming problems as well as information and education about new technology [22].

4. Conclusion

The results showed that the accessing information and communication behavior was in a very good category with a score of 4.65. The media used in communicating by peasant women are smartphone media, and social media namely Facebook and WhatsApp. Farmer women who are members of WFG also actively seek information from other sources. The ease of access and availability of smartphone media greatly facilitates access for farm women to find information related to urban farming. The success of urban farming in Pekanbaru City is also thanks to the support of local valleys, namely from the chairman of WFG, the head of RT, RT, and the government with counselling, education and funding.

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