

Conference Paper

Network Structure in Sustainable Urban Farming Development Policies in Makassar City

Mahyuddiin

Doctoral Program of Public Administration, Faculty of Social and Political Sciences, Hasanuddin University, Makassar, Indonesia

Abstract.

The development of urban farming and agriculture has been conducted by marginal communities. However, the role of the agricultural sector in the economic structure of Makassar city remains relatively small. This study aims to analyze the network structure of sustainable urban farming development policies in Makassar. Qualitative research methods were used in this study. Data collection methods included observations, in-depth interviews, and documentation. The data sources consisted of primary and secondary data, while data analysis was performed using an interactive method. The informants in this study were stakeholders directly involved in sustainable urban farming development policies. The results of this study show that the network structure in the development of sustainable urban farming policies in Makassar is not fully effective. This is because of the contact dimension, and the duration of contact between actors is still erratic, uneven, and unclear. In the trust dimension, there is still no written agreement or agreement on the development of sustainable urban farming in Makassar city that binds the actors involved. Meanwhile, the dimensions of information sharing and resource exchange dimensions in sustainable urban farming development policies in Makassar city have been progressing well.

Keywords: network structure, policy, development of urban farming

Corresponding Author:

Mahyuddiin; email:

sept11.2003@gmail.com

Published 2 October 2023Publishing services provided by
Knowledge E

© Mahyuddiin. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the 1st DIC Conference Committee.

1. Introduction

The involvement of the three pillars in governance is an approach that seeks to involve the state domain in the delivery of public services where there is synergy between the three state domains, namely the government, the private sector, and the community, which is known as a “governance”. The implementation of a government that prioritizes governance principles is very important to do because it is based on the fact that so far the government’s role has not been able to show maximum performance.

Such phenomena also have an impact on public policy. This has led to the emergence of a network approach in public policy studies because experts through various studies have found that so far, especially in Indonesia, policy activities have been heavily laden

 OPEN ACCESS

with the dominance of the government's role, starting from planning, formulation, and implementation, to the policy evaluation stage, and provide a place for the participation of public entities or other communities. Such problems must involve or have links with other problems so that various parties are involved in the process.

This shows that in policy studies to solve a particular problem or public affairs in governance, the government should not have absolute authority to unilaterally determine its wishes, but should also depend on other actors. These actors must also be actively involved in the policy process, which must be an inseparable interaction between the government and actors who have a direct relationship with policy issues. These actors interact with one another according to their relevance and role in solving public problems. The involvement of stakeholders in governance to solve public problems is known as a network approach.

The network structure, also known as the network structure, is presented as a new study in governance networks that is considered capable of assisting the government in solving various complex problems and improving the quality of public services.

In social network theory, the structure of social systems is conceptualized and measured as patterns of relationships between actors [1], [2], [3], [4]. Bonds in principle can be in the form of relational characteristics that can be seen based on the dimensions of contact, trust, information sharing, and resource exchanges, but contact frequency is most widely used to represent network structures [5].

A policy network is a concept that emphasizes that there is a pattern of relationships between the actors involved and is interdependent on the scope of a particular problem or public affairs. Many actors are involved in such a network model; therefore, complexity and dynamics are very likely to occur. Under these conditions, certain conflicts and unforeseen consequences are very likely to emerge. Thus, the network approach plays an important role in solving certain public problems.

The emergence of the concept of network structure is an effort by the government to overcome its limited resources, one of which is to implement sustainable urban farming policies. Bareja [6] states that urban farming or urban agriculture is the activity of cultivating plants or raising livestock in and around large cities (metropolitan areas) or small towns to obtain food or other needs and additional finances. Processing minimalist land use into productive land can support sustainable development.

Urban farming is a movement that started in the United States in an effort to address the poor situation and economic conditions of several countries during the World War II, especially the high price of vegetables at that time. Approximately 20 million victory gardens were created during World War II. In contrast to the United States, the

urban farming movement in Indonesia has emerged as a result of awareness that the community will lack Green Open Space (RTH) and lots of space or abandoned land that is not utilized.

Urban farming is a gardening concept that utilizes the existing spaces in homes or settlements. Limited community land is not an obstacle to building creativity to produce something useful. In addition to agricultural activities, farming and animal husbandry can be combined by implementing an Integrated Urban Farming System (IUFS). The IUFS is an environmentally sound, economical, and sustainable agricultural technique. In an integrated urban farming system, all waste produced can be reused.

In the city of Makassar, urban farming or urban agriculture is regularly conducted by the community. However, the role of the agricultural sector in the city's economic structure, Makassar, was relatively small. As an urban area with a high population density, Makassar City is supported by the primary sector in the form of trade and services and the secondary sector of industry processing, while the agricultural sector is unable to compete with other sectors. The sector was only able to contribute 4.22% of the GRDP in 2019 (BPS, 2020).

The dynamics of the city's rapid growth have driven the need to supply food, while agricultural land in Makassar City has continued to decrease. Sustainability of the development of staple food self-sufficiency is complex and difficult to maintain through city government policies. The concept of urban farming, which has been developed in several urban areas, can be a practical solution for balancing the supply of agricultural production.

Based on this explanation, this study aims to analyze the network structure in urban farming development policies in Makassar City using a social network theory approach.

2. Methods

Qualitative research methods were used in this study. The qualitative research method in this study aims to explain or describe problems in a systematic, factual, and accurate manner [7]. The research location is Makassar City, where the selection of this location is based on the problem, namely the network structure in sustainable urban farming development policies in Makassar City, and there has never been research conducted specifically on network structure in urban farming development policies so that it makes it easier for writers to obtain secondary data or information. directly. The informants in this study are people who are authorized to provide information about network

structures in implementing sustainable urban farming development policies in Makassar City, which is the Makassar City Food Security Service.

Primary and secondary data were obtained. Primary data are obtained directly from sources (not through intermediary media), which can be in the form of individual or group subject (person) opinions, observations of an object (physical), events or activities, and test results. Secondary data are obtained in a ready-made form or in the form of publication data. The primary data in this study are the result of direct interviews with informants and observations about the network structure in sustainable urban farming development policies in Makassar City, while secondary data consist of data related to sustainable urban farming development policies from the Internet, books, journals, and previous research. In this study, the main data collection techniques were in-depth interviews and participant observation, namely, observation where the researcher is involved with the daily activities of the person being observed or used as a source of research data. The study of documentation, namely, studying documents or records of events that have passed. The data analysis techniques in this study used interactive model data analysis techniques from Miles, et. al [8].

3. Results and Discussion

3.1. Implementation of Sustainable Urban Farming Development Policy in Makassar City

The implementation of urban farming development policies in Makassar City is part of a program to increase food diversification and community food security. In this program, there are community empowerment sub-activities for diversifying local resource-based food consumption, whose activities in supporting urban farming include:

1. Urban Farming Education and Training: This program aims to improve community knowledge and skills in Urban Farming. The Makassar City Government can organize training and workshops on farming techniques, crop management, and the maintenance of agricultural land. This program can also involve research institutions and academics in providing education and research related to urban agriculture in collaboration with the Makassar City Agriculture and Fisheries Service.
2. Equipment Assistance and Plant Seeds: Makassar City Government can provide agricultural equipment assistance, such as planting tools, irrigation, and plant maintenance tools, to people who are interested in getting involved in Urban

Farming. In addition, this program can also provide plant seeds that are suitable for the local environment to start agricultural activities

3. **Technical Support and Consultation:** Makassar City Government can provide technical support and consultation to people who wish to develop Urban Farming. This support can take the form of assistance in planning and implementing agricultural activities, consulting on effective agricultural techniques, and monitoring and evaluating agricultural products.
4. **Marketing and Distribution Network:** Makassar City Government can assist the community in marketing Urban Farming products. This program may involve collaboration with related institutions or organizations to build a distribution network and help market local agricultural products more broadly.

The development of sustainable urban farming in Makassar City involves several actors or stakeholders with their respective duties and responsibilities, as mentioned below.

1. The Makassar City Government has duties and responsibilities as follows:
 1. Financial resources to support funding for the Urban Farming program and related infrastructure.
 2. Access to relevant policies and regulations, as well as licensing arrangements that facilitate program implementation.
 3. Provision of suitable land for Urban Farming activities, either through land ownership or cooperation schemes with the private sector or community.
2. Relevant government agencies have the following duties and responsibilities:
 1. Technical knowledge and expertise in urban agriculture, fertilization, pest control, organic waste management, and sustainable practices.
 2. Data and information on soil quality, natural resources, and environment are relevant for program planning and implementation.
 3. Access to farming networks and communities that can provide support, training, and transfer of knowledge to communities.
3. Communities and Farmer Groups have duties and responsibilities as follows:
 1. Local knowledge of the environment, traditional farming practices, and plant varieties suitable for the area.

2. Local labor to carry out agricultural activities, plant care, and harvesting.
3. Active involvement in program implementation, such as land management, plant maintenance, and product marketing activities.
4. Research and academic institutes have the following duties and responsibilities:
 1. Scientific research and analysis related to urban agriculture, farming techniques, fertilization, waste management, and sustainable practices.
 2. In-depth knowledge of the latest innovations and technologies that can be applied to Urban Farming.
 3. Provision of recommendations and expert consultation in program planning, monitoring, and evaluation.
5. The private and business sectors have the following duties and responsibilities:
 1. Financial resources and investment to support infrastructure development, equipment procurement, and technological development related to Urban Farming.
 2. Provision of agricultural products and services such as organic fertilizers, plant seeds, farming tools, and irrigation systems.
 3. Access to markets and distribution networks that can help market Urban Farming products.

The budget for the implementation of urban farming development in Makassar City over the last five years can be seen in the table below.

TABLE 1: Budget of Urban Farming Development Activity Program in Makassar City for 2019-2023.

Total Urban Farming Budget for the last 5 (Five) Years				
2019	2020	2021	2022	2023
936,945,685	579,831,875	552,726,330	16,027,277,000	16,989,858,800

Source: Food Security Service, 2023

The table above shows that the largest budget for the development of urban farming in Makassar City is for 2023, which is Rp. 16,989,858,800, and the lowest in 2021, which is Rp. 552,726,330.

3.2. Network Structure in Sustainable Urban Farming Development Policy in Makassar City

As stated by Klijn and Koppenjan (2016), indicators in a policy network consist of four dimensions: number of contacts, trust, information sharing, and exchange of resources. These four dimensions are used to explain the network structure in sustainable urban farming development policies in Makassar City, as explained below.

3.2.1. Contact Dimension

In policy networks, the contact frequency is the most widely used to view structures. This can be seen in the number of contacts or relationships between the actors in the network policy. The frequency of contact can be seen from the contributions made by each actor to the network organization in the process of solving policy problems. Then, the duration of the interaction between actors is involved. Finally, we examine the extent to which the relationship between each actor can provide mutual utility or benefit.

The sustainable urban farming development policy in Makassar City was implemented through the Lorong Wisata Program, and several actors played a role in the development of sustainable urban farming. As the leading sector, the Food Security Service provides guidance and development of agro-tourism and assists the target group (farmer groups) in the form of input assistance (production facilities). Then, the Department of Agriculture contributed as an extension agent to support the target group in this case farmer groups as program recipients tourist alleys in plants. Then, the sub-district- and district-level governments act as facilitators and motivators in increasing the participation and involvement of the community and target groups. Meanwhile, higher education institutions contribute to guiding and assisting empowering communities and target groups to participate in the development of sustainable urban farming through the Lorong Wisata Program.

The interaction between actors in the implementation of urban farming development is uncertain; it exists in which interaction is quite intense and there is less interaction intensity. The interaction (communication) between the Office of Food Security and Extension from the Department of Agriculture is sufficiently intense because it comes down to more fields to monitor the implementation of urban farming through the Tour Alley Program.

From an economic perspective, the utility or benefits obtained by the target group from the Lorong Wisata Program are that the target group can meet the daily food needs

of the community and bring profits and sustainable income through the marketing and processing of crops into a product. From an ecological perspective, the Lorong Wisata Program can create and improve green spaces in Makassar City, create more oxygen, and minimize air pollution. This program can also attract the public to visit and tour the tourist alley and increase knowledge of the community about plant cultivation techniques.

Based on the above explanation, it can be said that the contact dimension in sustainable urban farming development policies in Makassar City is still not optimal. This is because there is still a lack of duration of contact between actors where the interaction between actors in the implementation of urban farming development is erratic and uneven, some are intense and some are not intense in the interactions between these actors.

3.2.2. The Dimension of Trust

Trust in the policy network supports the achievement of policy objectives. A high level of trust between each of the actors involved will show more and better cooperation than a network organization with a low level of trust. This dimension of trust in government networks can be explained in several aspects, as suggested by Kljn and Kopenjan [5] including trust in agreements, worry benefits, reliability, absence of opportunistic behavior, and belief in goodwill.

First, trust in an agreement. Parties involved in network organizations generally follow agreements that have been stipulated in mutually agreed contracts. The basis for implementing sustainable urban farming development policies in Makassar City through the Lorong Wisata Program is mutual trust between actors to carry out their duties and responsibilities and to contribute to each other according to their respective duties and responsibilities. The division of tasks for each Regional Work Unit (SKPD) is stipulated in Mayor's Regulation (Perwali). However, there is still no written contract or agreement with all the actors involved in the sustainable urban farming development policy in Makassar.

The second factor was the benefit of worry. Parties within the network organization warn each other about fear of program failure. All actors in the implementation of urban farming development policies in Makassar City worked according to their respective main tasks and functions. The success or failure of this policy is the responsibility of all the actors. If a complaint is received during the implementation of this program and is not related to this SKPD (Regional Work Unit), it will be submitted to the relevant SKPD

(Regional Work Unit) as input and monitoring results in the field. In this environment, actors can share knowledge, experiences, and warnings related to possible challenges and risks that may arise during program implementation.

The third factor is related to reliability. This is demonstrated by the existence of an agreement and togetherness in the implementation of joint programs. A joint agreement can succeed in the urban farming development policy in Makassar City, but there is no written agreement. The agreement was made verbally at the Lorong Wisata Programme coordination meeting. However, all actors involved in the sustainable urban farming development policy in Makassar City agree to carry out the program together.

The fourth is the absence of opportunistic behavior. There are no parties in the organizational network that take advantage of themselves and harm other people or actors, and these actors carry out programs indifferently. The policy of developing sustainable urban farming in Makassar City, based on the results of this research, shows that there are no actors who take advantage of themselves and harm other actors. Attempts or mechanisms such as meetings, consultations, negotiations, and dialogues are used to facilitate agreement and mutual understanding regarding the goals, strategies, tasks, responsibilities, and roles of each actor in implementing sustainable urban farming development policy programs in Makassar City so that they can anticipate and reduce the occurrence of unwanted things like that.

The fifth is related to beliefs in goodwill. Parties in this activity assume that the goodwill of other parties is beneficial to the success of the program. It has become a necessity for all actors to solve problems and succeed in the sustainable urban farming development policy program in Makassar City. However, if there is an obstacle or problem, it will be discussed in a coordination meeting with all actors to find a solution.

Based on this explanation, it can be said that the dimension of trust in sustainable urban farming development policies in Makassar City has built trust among the actors involved. This is shown by all the actors involved in reminding each other and working together to make the program successful, and no one takes advantage of or harms other actors. It's no written agreement and agreement in the development of urban farming in Makassar City binds that binds these ac

3.3. Information-Sharingn Sharing Dimensions

Sharing information in the network can be interpreted as the willingness of each actor to provide or inform information that is owned and not known by other actors to solve problems. To achieve goals in a network organization, the actors involved need to

share complex information about resources, processes, and issues in the network. The information-sharing aspects cover the extent and quality of information shared by actors in network organizations.

The scope of information provided by each actor in the implementation of sustainable urban farming development policies in Makassar City may vary depending on their roles, responsibilities, and capacities. The following is the range of information that can be provided by these actors:

1. The Makassar City Government provides information related to
2. Information about policies and regulations related to sustainable urban farming in Makassar
3. A city development plan that includes land use, infrastructure, and permits.
4. Demographic data and statistics are relevant to program planning and monitoring.
5. Relevant government agencies (Agriculture Service, Food Security Service, Environment Service Life) and provides related information:
6. Technical and practical guidelines for sustainable Urban Farming.
7. Data regarding land availability, soil quality, and relevant natural resources.
8. Report and Evaluation of Program Implementation and Results
9. Communities and farmers' groups provide information related to
10. Local knowledge of environmental conditions, traditional farming practices, and plant varieties suitable for the area.
11. Input and feedback from farmers and related communities regarding their needs, challenges, and expectations of the Urban Farming program.
12. Data on crop yield, resource use, and economic and social benefits were derived.
13. Research and Academic Institute providing information related to
14. Scientific research related to Urban Farming includes research on farming techniques, fertilization, pest control, and environmental management.
15. Analysis and evaluation of the success of sustainable Urban Farming programs in other places can be used as a reference.
16. The private and business sectors provide information related to

17. Technological innovations and products related to urban agriculture, such as hydroponic systems, farming tools, and organic waste management services.
18. Information on potential markets and business opportunities related to Urban Farming products.
19. Availability of financial and investment resources to support program implementation.

The results of this study also show that all actors in the sustainable urban farming development policy in Makassar City have provided information to the public regarding the development of urban farming through the Lorong Wisata Program. The dissemination of this information is adjusted to the duties and responsibilities of the actors involved in implementing the program. In addition, the scope of information provided by each actor is carried out massively and intensely, for example, through face-to-face meetings between the parties, communication via social media, and the dissemination of information or counseling through applications and online newspapers.

Regarding the quality of information, each actor provides information directly to the public by going directly to the field, but there is also the dissemination of information through social media and print media. Dissemination of information is also carried out periodically online and scheduled, especially those that have been stated in the planning and budgeting documents. Regarding the completeness of the information, as done by the Food Security Service, the information is complete. The dissemination of this information was carried out directly to the community, as well as through the sub-district government and sub-district government regarding the requirements for people who wish to become target groups and farmer groups in the Lorong Wisata Program.

Based on the explanation above, it can be said that the dimension of information sharing in sustainable urban farming development policies in Makassar City has been going quite well, as shown by the actors in the target group of actor programs that are carried out massively and intensely using various media and carried out effectively, periodically and scheduled according to the planning and budgeting documents.

3.4. The Resource Exchange Dimension

Each actor involved in the policy network has its resources, but there are always deficiencies or limitations, and insufficient resources are owned; thus, in the policy network concept, the actors cannot achieve goals without using the actors' resources.

other. The resources in question can be in the form of skills, information, or finance. This can be observed in the availability and adequacy of these resources.

The availability of resources in the sustainable urban farming development policy in Makassar City is quite high, including human resources, natural resources, and other supporting factors such as infrastructure for agricultural cultivation budgeted by the Makassar City Government. Each actor has available resources to help and succeed in sustainable urban farming development in the City of Makassar through the Lorong Program Tour.

For the exchange of resources to be effective, each actor must first identify weaknesses and problems that cannot be implemented in the future. Then, after doing identification, it will determine the resource that is needed so that future exchange of resources for each actor can be clearer and can be effective.

The explanation above shows that the dimension of resource exchange between actors in sustainable urban farming development policies in Makassar City has been going quite well. Each actor coordinates in advance to provide resources that can help in successful sustainable urban farming development in Makassar.

4. Conclusion

Based on the results of the research and discussion above, the conclusions of this study indicate that the network structure in the development of sustainable urban farming policies in Makassar is not fully effective. This is because of the contact dimension, and the duration of contact between actors is still erratic, uneven, and unclear. In the trust dimension, there is still no written agreement or agreement on the development of sustainable urban farming in Makassar City that binds the actors involved

References

- [1] Laumann. Study basic public policy. Oxford University Press. 1976.
- [2] Aldrich H, Whetten DA. Organization-sets, action-sets, and networks: Making the most of simplicity. *Handbook of Organizational Design*. 1981;1:385-408.
- [3] Laumann EO, Knoke D. The organizational state: Social choice in national policy domains. University of Wisconsin Press. 1987.
- [4] Scott J. Networks of corporate power: A comparative assessment. *Annual Review Sociology*. 1991;17(1):181–203.

- [5] Klijn E, Koppenjan J. Governance networks. The public sector. London: Routledge. 2016.
- [6] Bareja B. Intensify urban farming. Grow Crops in the City. 2010.
- [7] L. Moleong. Qualitative research methods. PT. Rosdakarya youth. 2017.
- [8] Miles M, Huberman A, Saldana J. Qualitative data analysis, a methods sourcebook. 3rd ed. Sage Publications. 2014.