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Analysis of the Performance of Women Farmers Group Using CPI and WP Methods Based on WebGIS

Analisis Prestasi Kumpulan Peladang Wanita Menggunakan Kaedah CPI dan WP Berdasarkan WebGIS

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ABSTRACT

Urban farming has emerged as a solution to reduce agricultural land due to urbanization. Through the role of the Women's Farmer Group (KWT), urban farming not only helps food security but also empowers women and preserves the environment. This study aims to analyze the performance of Women Farmer Groups (KWT) in Bogor City by comparing the Weighted Product (WP) and Composite Performance Index (CPI) methods, as well as designing a Geographic Information System (GIS) to map the distribution of KWT. The 2022 KWT data includes coordinates, names, land areas, and commodities planted. The Mean Square Error (MSE) method is used to compare the accuracy of the two methods. The results showed that the CPI had an MSE of 0.3, while the WP had 0.8. The CPI is more accurate, the WP is more efficient and gives good results, with the KWT Ciharashas achieving the highest rank (V = 0.0242 for WP and CPI = 66.60). CPI is recommended as the right method for KWT evaluation in Bogor City. This research is expected to help KWT evaluators and related BAPPERIDA agencies in assessing the development of KWT and promoting urban farming.

Keywords: Decision Support System; Weighted Product; Composite Performance Index; Average Squared Error; Women Farmer Group

INTRODUCTION

Agriculture plays an important role in the sustainability of human life. However, in Indonesia, rapid population growth and technological developments have led to the conversion of agricultural land into settlements and the development of other sectors such as tourism and industry. This phenomenon is very prevalent in large cities. The reduction of agricultural land in urban areas has a negative impact on agricultural activities, which ultimately affects the availability of food for urban communities. As a solution to overcome this problem, the concept of urban farming has emerged. This concept aims to reduce food supply uncertainty, address the problem of urban poverty, and improve urban environmental management (Kadek et al, 2020). The presence of agriculture in urban areas and its surroundings not only serves to meet food needs but also has practical value that can have a positive impact on ecological

and economic sustainability in urban areas. If urbanization is carried out by paying attention to environmental aspects, it will bring various benefits (Ahmad et al, 2016).

The role of women in supporting the development of the agricultural sector involves their participation in the initiation of programs aimed at empowering women. One of these programs is the food and nutrition diversification program, which focuses on efforts to increase yard productivity as part of efforts to increase food security at the family and community levels. This program includes the use of yard land, household waste management, and the processing of agricultural products into industrial goods on both small and large scales (Asriyanti, 2018).

The role of women in the agricultural sector is one of the important strategies to achieve equality in agricultural development. The Women's Farmers Group is an organization that accommodates farmers, especially women who are active in the agricultural sector. KWT is different from other farmer groups because its development process focuses on the growth of productive businesses at the household level, combining the use and processing of agricultural and fishery products. KWT plays an important role in the development of urban agriculture, with various levels of development and performance in Bogor City; some are visually developed, while others are less developed (Maulini et al, 2021). Finding the best KWT can provide benefits for the quality of life and welfare of the surrounding community. Women's empowerment is reflected in three key indicators of technical assessment: the number of members reflects social capacity, commodity diversity reflects economic flexibility and innovation, and land area reflects agribusiness governance. Therefore, the higher the technical evaluation score, the greater the contribution of women to the development of urban agriculture. This assessment is a quantitative reflection of women's collective capacity in building local food security. Therefore, in this context, it is necessary to analyze the performance of KWT using the CPI and WP methods to determine the performance of KWT, and then analyze which method is most suitable for KWT research.

PROBLEM STATEMENT

Based on the introduction that has been explained, the problems that will be studied in this study are as follows:

1. How to analyze the WP and CPI methods to determine the right method in the assessment of KWT in Bogor City?
2. How to design a Geographic Information System for KWT distribution in Bogor City?

LITERATURE REVIEWS

Table 1: Literature review

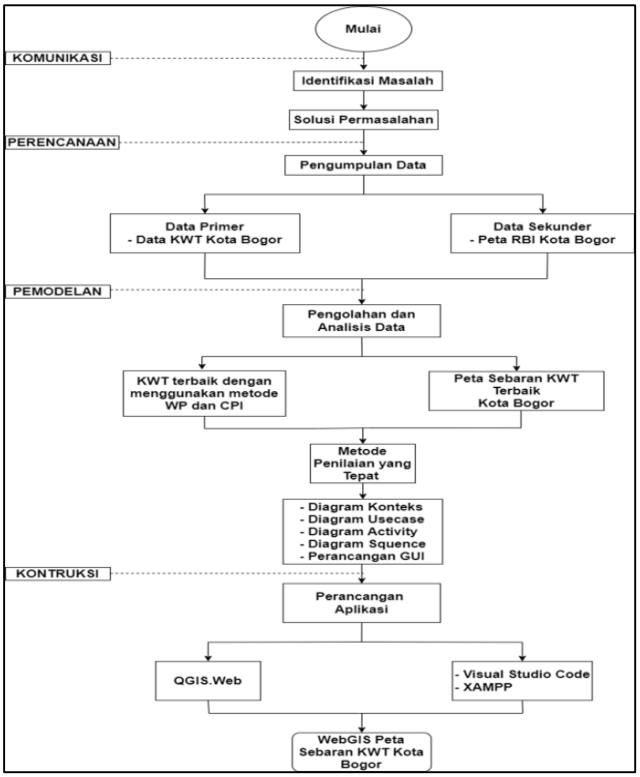
No	Author, Year of Research, Title	Result	Conclusion
1.	Aliy Hafiz, Muhammad Ma'mur, (2018), The Best Employee Selection Decision Support System with a Weighted Product Approach.	Support system results using Weighted Products (WP) can be applied to elect employees best at PT. Telkom Cab. Lampung. The application can provide convenience for companies in selecting the best employees So that future results spur employee performance and make the company grow rapidly.	Describe the Weighted Product method.

No	Author, Year of Research, Title	Result	Conclusion
2.	Helmi Yardi Hermawan, Eric Viotano, Kristoforus Samorudu Zalukhu, Budi Setiawan, (2024) Making a map of the distribution of tourist destinations in Angsana Tourism Village, Setu Village, Jasinga District.	The final result of all stages of the process that has been done previously in the program work of the Regional Planning Study Program and city (PWK) in the activity program community service or (Pkm) in Angsana Tourism Village, Setu Village, Jasinga District generate output in the form of a location map Angsana Tourism Village, Setu Village and also Map Village Tourism Destination Distribution Master Plan Expected Angsana Setu Village Tourism to establish the development of Setu Village in introducing Angsana Tourism Village to The World of Tourism.	Links about distribution maps.
3.	Rima Maulini, Oki Arifin, Dwirgo Sahlinal, Kurniawan Saputra, (2021), Geographic Information Systems in Women Farmer Groups Based on Object Data.	Geographic Information Systems distribution of Women Farmer Groups (KWT) in the Province Lampung with JSON by utilizing the database operational as JSON for a database of documents that generally using relational databases.	Proximity about the distribution map of the Women's Farmers Group (KWT).
4.	Dinda Fransiska, (2023), Decision Support System for Determining the Best E-commerce Using the Weighted Product Method.	From the calculation results, a calculation value is produced from the highest to the lowest, where the result with the highest value is the value chosen as the first rank and declares e-commerce as the best recommended to be chosen.	Linkage about finding the best alternative using the Weighted Product method.
5.	Rizal Tjut Adek, Zara Yunizar, Mahendra Febriliansyah, (2023), Geographic Information System for Mapping and Determining Strategic Natural Tourism Locations Using a Simple Additive Method Weighting (SAW).	GIS applications for mapping and determining the most strategic tourist attractions can be used as a decision-making tool by applying the SAW method as the basis for making result.	The relationship between decision support systems and geographic information systems.

METHODOLOGY

The stages of this research method can be seen in Figure 1 below.

Figure 1: Skeleton



Communication

At this stage of communication, problem analysis is carried out to gather information in order to gain a deep understanding of the situation or problem at hand. The goal is to identify the root of the problem, the causative factors, the impact, and the relationship between the related factors. There are also troubleshooting solutions to identify and take effective action to address the identified issues. The goal is to find the right and effective solution to solve the problem.

Planning

At this planning stage, data collection is carried out, which involves gathering information necessary for research, analysis, or decision-making purposes. Data collection is a systematic step that must be followed to ensure that the data obtained meets the purpose of the research or analysis being conducted. In this study, there are secondary data and primary data.

Modelling

At this modelling stage, the researcher conducts data processing and analysis. The data used are: Data from the Mapping of the KWT FGD in Bogor City (2022). At the stage of processing KWT Data, the data will be analyzed using the WP and CPI methods to conduct the most optimal KWT assessment, followed by analyzing which method is most appropriate for the KWT assessment using MSEs. At this stage of modelling, diagrams are also created, including Context Diagrams, Use Case Diagrams, Activity Diagrams, Sequence Diagrams, and GUI Designs.

Pembangunan

At this stage of construction, the system is designed using the QGISWEB platform. The languages used by this system are JavaScript (JS), Hypertext Preprocessor (PHP), and Cascading Style Sheets (CSS). The system can be run using an offline server with an XAMPP control panel.

FINDINGS AND DISCUSSION

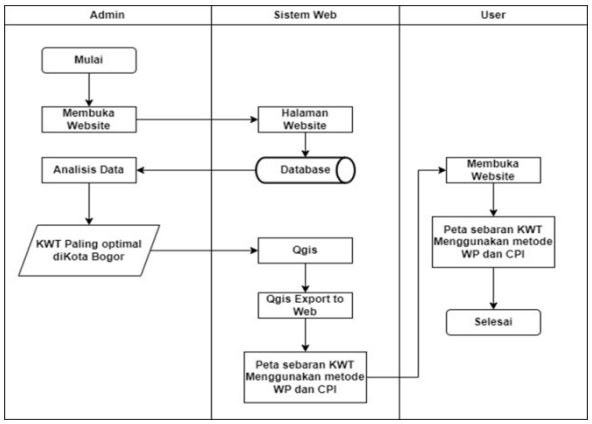
Problem Identification

Problem analysis shows that unmonitored KWT (Women's Farmer Group) will lead to a decrease in their performance in utilizing their agricultural land, resulting in a lack of diversity of their commodities. In addition, the inadequate number of KWT members can limit their efforts in maintaining agricultural activities. Furthermore, the determination of the right method for KWT evaluation and the lack of information about the distribution of KWT in Bogor City are also problems.

Problem Solving

Create an analysis in Microsoft Excel using the CPI and WP methods to determine which KWT is the most optimal, then analyze both methods to find out which one is the most accurate. To make it easier to see KWT distribution information in Bogor City, WEBGIS has been created. Here is the view of the proposed WEBGIS system in Figure 2.

Figure 2: Proposed system



Planning

Data Collection

At this stage, data collection is carried out. The data needed are primary data and secondary data. Primary data is data collected directly from the original source. While secondary data refers to data that already exists and has been collected by other parties or from other sources. The following is Table 2 data obtained in this study.

Table 2: Data

No	Data	Data Type
1	Mapping Results of the FGD (Focus Group Discussion) of KWT Bogor City in 2022	Diameter
2	SHP (Shapefile) Bogor City Boundaries	Second

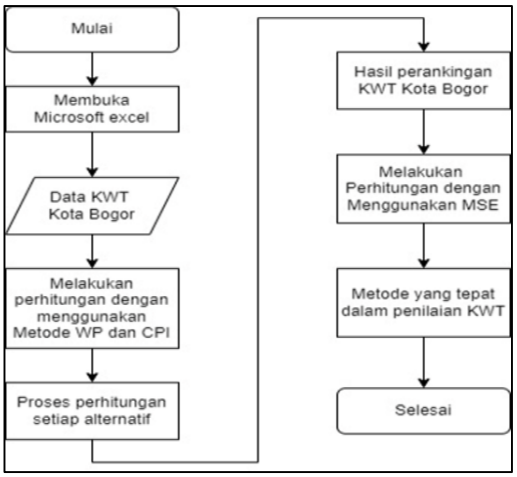
In 2022 data is used because it is the latest official data available during the research implementation, obtained from the results of mapping by local government agencies through FGDs and field reports. Although newer data may be available, the 2022 data is still considered representative for developing an initial WebGIS-based assessment system. The difference in Mean Square Error (MSE) values between the CPI (0.3) and WP (0.8) methods shows a significant difference in evaluation accuracy. The CPI provides performance predictions that are closer to the reality on the ground, while the WP tends to provide a larger deviation. The practical implication is that the selection of more accurate methods will provide more targeted policy recommendations in the empowerment and development of KWT.

Modelling

Data Processing and Analysis

Data processing and analysis is carried out. The data used is: Bogor City KWT Data in 2022. The flowchart can be seen as Figure 3 below.

Figure 3: Data processing flow diagram



Calculation of the WP Method

At this stage of calculation, the goal is to find the best alternatives available, starting from determining the criteria to be considered, determining attributes, to determining the weight of each criterion. The following is Table 3. This is a weight correction table.

Table 3: Weight gain criteria

No	Criterion	Heavy	Attribution	Weight Improvement
1	Cultivated land area (m^2)	5	Benefit	$\frac{5}{12} = 0{,}42$
2	Number of members	4	Benefit	$\frac{4}{12} = 0{,}33$
3	Various commodities	3	Benefit	$\frac{3}{12} = 0{,}25$

From the data above, the criteria used have been determined, and the weight of importance has also been given to each criterion, then the calculation of Vector S is carried out. Vector S uses 10 samples of visible data as shown in Table 4 front.(m^2)

Table 4: S vector calculation

No	KWT	Account	Result
1	Ciharashas	$(100^{0,42}) * (87{,}2^{0,33}) * (45{,}5^{0,25})$	78,44
2	Puspa Sari	$(69{,}4^{0,42}) * (51{,}3^{0,33}) * (72{,}7^{0,25})$	63,50
3	Mekar Saluyu	$(55{,}6^{0,42}) * (79{,}5^{0,33}) * (63{,}6^{0,25})$	64,76
4	Sustainable	$(55{,}6^{0,42}) * (59{,}0^{0,33}) * (90{,}9^{0,25})$	64,10
5	Kentagor Mandiri	$(83{,}3^{0,42}) * (84{,}6^{0,33}) * (54{,}5^{0,25})$	75,34
6	Srikandi KBB	$(47{,}2^{0,42}) * (100^{0,33}) * (100{,}0^{0,25})$	73,15

No	KWT	Account	Result
7	Sustainable nature	$(55{,}6^{0{,}42}) * (56{,}4^{0{,}33}) * (72{,}7^{0{,}25})$	59,73
8	Barokah Partners	$(55{,}6^{0{,}42}) * (76{,}9^{0{,}33}) * (45{,}5^{0{,}25})$	58,89
9	Self-sufficient	$(44{,}4^{0{,}42}) * (76{,}9^{0{,}33}) * (45{,}5^{0{,}25})$	53,66
10	Cempaka	$(38{,}9^{0{,}42}) * (76{,}9^{0{,}33}) * (54{,}5^{0{,}25})$	53,13
S Total			**644,70**

From the calculation above, it can be seen that the highest S vector value is obtained by S1 with an S vector value of 78.44, followed by S5 with an S vector value of 75.34 and so on, then for the smallest S vector value is obtained by S6 with an S vector value of 75.34. Furthermore, the calculation of the vector value V, the value of V is the final value and is used to do the ranking, the following is Table 5 the calculation and result using formula (2) of the value of Vector V.

Table 5: Vector calculation V

No	KWT	Account	Result
1	Ciharashas	(78,44/644,70)	0,1217
2	Puspa Sari	(63,50/644,70)	0,0985
3	Mekar Saluyu	(64,76/644,70)	0,1005
4	Sustainable	(64,10/644,70)	0,0994
5	Kentagor Mandiri	(75,34/644,70)	0,1169
6	Srikandi KBB	(73,15/644,70)	0,1135
7	Sustainable nature	(59,73/644,70)	0,0926
8	Barokah Partners	(58,89/644,70)	0,0913
9	Self-sufficient	(53,66/644,70)	0,0832
10	Cempaka	(53,13/644,70)	0,0824
V Total			**1**

From the data in the table above, a ranking table was made, where the highest ranking was found by KWT Ciharashas with a value of 0.1217, then followed by KWT Kentagor Mandiri with a value of 0.1169, followed by KWT Srikandi KBB with a value of 0.1135, and so on. The following is Table 6 which is a ranking table.

Table 6: WP method ranking

No	KWT	Vector V	Level
1	Ciharashas	0,1249	1
2	Kentagor Mandiri	0,1199	2
3	Srikandi KBB	0,1164	3
4	Mekar Saluyu	0,1031	4
5	Sustainable	0,1020	5
6	Puspa Sari	0,1011	6
7	Sustainable nature	0,0951	7
8	Barokah Partners	0,0937	8
9	Self-sufficient	0,0750	9
10	Cempaka	0,0688	10

Data Processing

Next, a recalculation was carried out using the CPI method. To calculate using the CPI method, it starts by determining the criteria and the level of importance of the criteria (weight). After the criteria and

weights are determined, an analysis is carried out to find out the nature of the criteria whether it is a positive trend or a negative trend. The results of determining the criteria, the nature of the criteria, and the weight of the criteria can be seen in Table 7.

Table 7: Weight Improvement

No	Criterion	Heavy	Train	Weight Improvement
1	Cultivated land area (m^2)	5	+	$\frac{5}{12} = 0{,}42$
2	Number of members	4	+	$\frac{4}{12} = 0{,}33$
3	Various commodities	3	+	$\frac{3}{12} = 0{,}25$

After determining the trend of each criterion, then calculations are carried out to obtain the transformation value for each alternative which will later be calculated using the CPI approach. To calculate the positive trend to obtain the transformation value can be expressed by the calculation formula (3**Error! Reference source not found.**. So that the results are obtained as shown in Table 8 below.

Table 8: Transformative value

No	KWT	C1	C2	C3
1	Ciharashas	100,0	45,9	38,5
2	Kananga Babakan	22,2	33,8	92,3
3	Kentagor Mandiri	83,3	44,6	46,2
4	Sustainable	55,6	31,1	76,9
5	Sustainable Nature	55,6	29,7	61,5
6	Jasmine Rose	22,2	100,0	15,4
7	Mekar Saluyu	55,6	41,9	53,8
8	Barokah Partners	55,6	40,5	38,5
9	Puspa Sari	69,4	27,0	61,5
10	Srikandi KBB	47,2	52,7	84,6

After obtaining the transformation value, a calculation is carried out to obtain the value of the Alternative Index. To obtain the value of an alternative index, each criterion value is multiplied by the value of the criterion weight so that it can be expressed by the Calculation formula (5**Error! Reference source not found.**. The results of this calculation are shown as shown in Table 9 below.

Table 9: Alternative index value results

No	KWT	C1 (0,42)	C2 (0,33)	C3 (0,25)
1	Ciharashas	41,7	15,3	9,6
2	Kananga Babakan	9,3	11,3	23,1
3	Kentagor Mandiri	34,7	14,9	11,5
4	Sustainable	23,1	10,4	19,2
5	Sustainable Nature	23,1	9,9	15,4
6	Jasmine Rose	9,3	33,3	3,8

No	KWT	C1 (0,42)	C2 (0,33)	C3 (0,25)
7	Mekar Saluyu	23,1	14,0	13,5
8	Barokah Partners	23,1	13,5	9,6
9	Puspa Sari	28,9	9,0	15,4
10	Srikandi KBB	19,7	17,6	21,2

After getting the Alternative Index value, then look for the Combined Index value to get the combined index value, and the ranking is done, all the alternative indexes will be summed up. The results of the combined index values can be seen in Table 10.

Table 10: Combined indices and aggregate values

No	KWT	CPI	Level
1	Ciharashas	66,60	1
2	Kentagor Mandiri	61,13	2
3	Srikandi KBB	58,40	3
4	Puspa Sari	53,33	4
5	Sustainable	52,74	5
6	Mekar Saluyu	50,57	6
7	Sustainable nature	48,44	7
8	Jasmine Rose	46,44	8
9	Barokah Partners	46,28	9
10	Kananga Babakan	43,60	10

From Table 9 above, the KWT ranking shows, where KWT Ciharashas achieved the highest rank with a score of 66.60, followed by KWT Kentagor Mandiri with a score of 61.13, and KWT Srikandi KBB with a score of 58.40.

Comparison of Income Tax and CPI Yield

After doing the calculation using the WP and CPI methods, make a comparison table of ranking results. The following is Table 11 which is the result of an analysis of the KWT assessment using the taxpayer and CPI methods.

Table 11: Comparison of WP and CPI methods

KWT	Vector V	KWT	CPI	Level
Ciharashas	0,1249	Ciharashas	66,60	1
Kentagor Mandiri	0,1199	Kentagor Mandiri	61,13	2
Srikandi KBB	0,1164	Srikandi KBB	58,40	3
Mekar Saluyu	0,1031	Puspa Sari	53,33	4
Sustainable	0,1020	Sustainable	52,74	5
Puspa Sari	0,1011	Mekar Saluyu	50,57	6
Sustainable nature	0,0951	Sustainable nature	48,44	7
Barokah Partners	0,0937	Jasmine Rose	46,44	8
Self-sufficient	0,0750	Barokah Partners	46,28	9
Cempaka	0,0688	Kananga Babakan	43,60	10

The table above shows the results of the assessment using the WP and CPI methods. KWT Ciharashas received the highest score from both methods. There are 5 equations and 5 difference in ranking between the two methods. This study covers the entire population of the Farmer Women Group (KWT) in Bogor

City which totals 104 groups, so sampling was not carried out. The CPI and WP methods were chosen because they are both Multi-Criteria Decision Making (MCDM) methods that are commonly used for performance evaluation with several criteria. A 95% confidence interval has been calculated for each MSE value to ensure statistical significance for the difference in performance of the two methods. The results show that the CPI is consistently more stable and reliable. The designation of the Ciharashas KWT as the group with the highest score has strategic policy implications: training and intervention programs can be directed to replicate the success of the KWT management to other low-performing groups.

Comparison by Using MSE

After the final result of the calculation with the WP method and the CPI method is known, a comparison is carried out to determine which method is appropriate in the assessment of KWT using MSE, to calculate MSEs can be expressed with the calculation formula (7**Error! Reference source not found.**. Based on the results of the calculation using all data with a total of 104 data using MSE, the results of the comparison calculation between the WP and CPI methods can be seen as shown in Table 12.

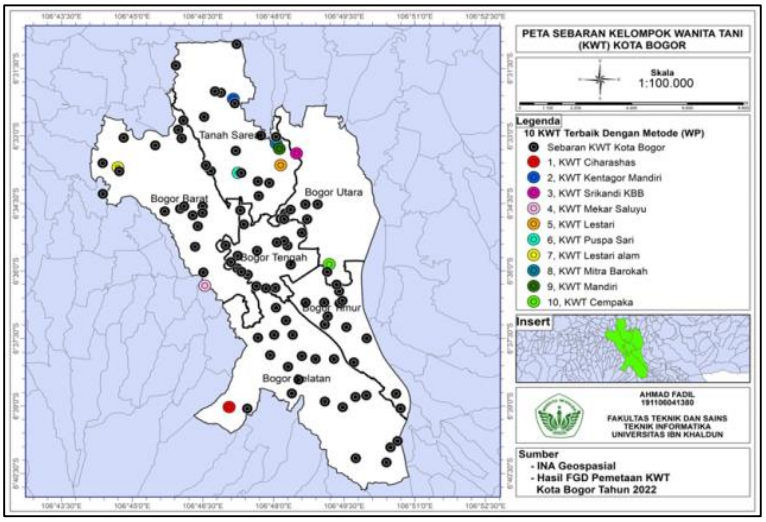
Table 12: Comparison of MSE WP and CPI methods

No	Method Name	MSEs
1	Weighted Products (WP)	0,8
2	Index Composite Performance (CPI)	0,3
	Minimum UMK	**0,3**

KWT Distribution Map of Bogor City

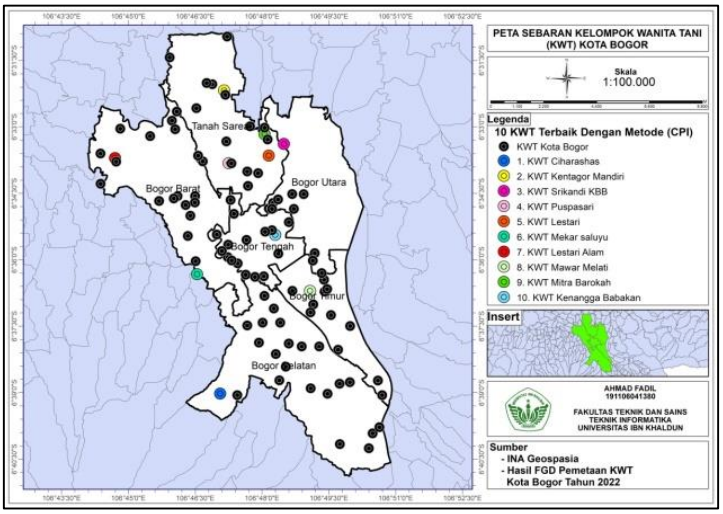
The following is Figure 4 is a map of the distribution of KWT in Bogor City by displaying the 10 best KWT using the WP method.

Figure 4: WP method KWT distribution map



Furthermore, below is the result of the KWT distribution map in Bogor City using the CPI method. The following is Figure 5 which is a map of the distribution of KWT in Bogor City by displaying the 10 best KWT using the CPI method.

Figure 5: CPI Method KWT distribution map



The KWT evaluation method used by government agencies to date is still descriptive, qualitative, and based on manual reporting. This makes it difficult to make decisions based on objective data.

According to the data from the Bogor City Food Security Office, since 2020 there has been an increase in the number of urban farming groups by 28%, showing a significant growth trend and the importance of having a criterion-based and spatial evaluation system such as CPI and WP.

Context Diagram

A Context Diagram is a process that describes the scope of a system. A Context Diagram is a diagram that describes the process of a system being created, a diagram used to establish the context and constraints of a model system. The context is shown in Figure 6.

Figure 6: Context diagram

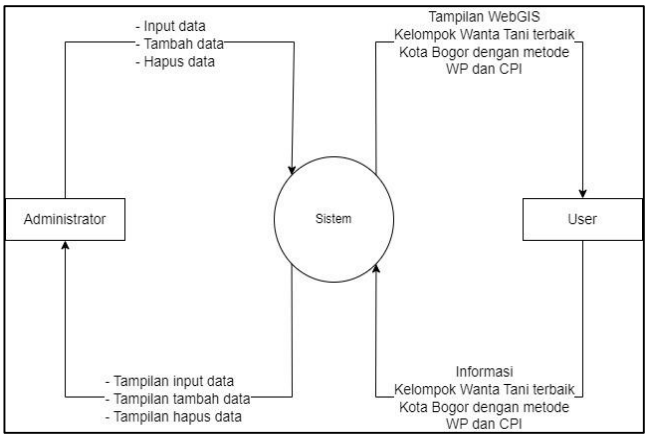
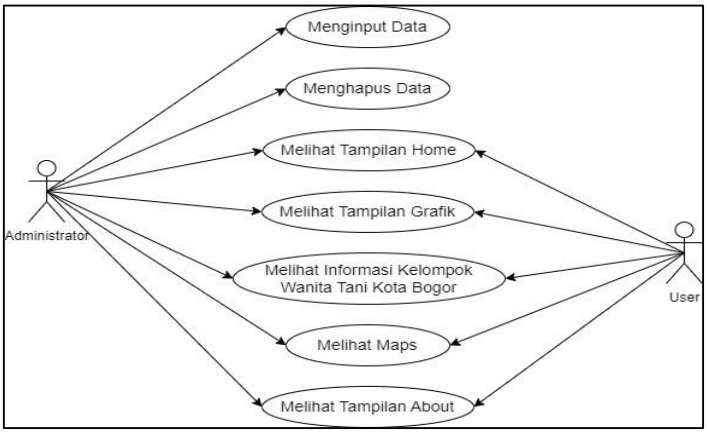


Diagram Use Case

Figure 7: Use case



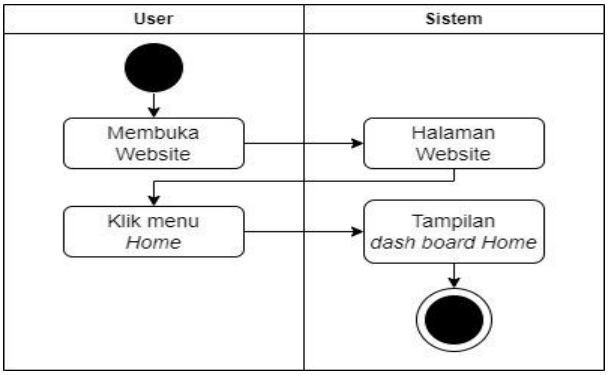
The Use Case diagram describes the actor activity when performing an activity on the system. The use case of diagram is shown in Figure 7.

Diagram Activity

Activity diagram describes how an activity starts. Activity diagram sees a map that explains the process when carrying out functions to see a map of the distribution of Women Farmer Groups in Bogor City and what are the possibilities of depicting activity diagrams of each activity that can be carried out on the system.

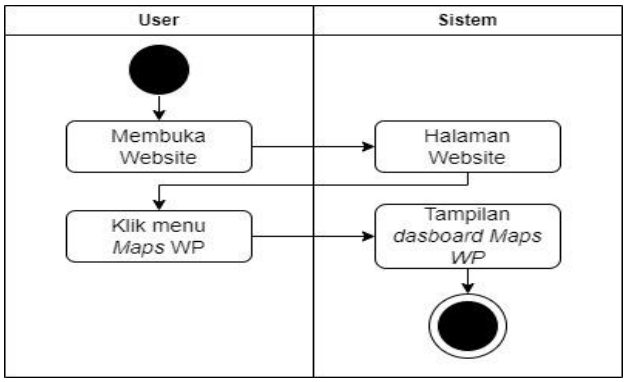
a) A diagram of the activity of users viewing the home page in WebGIS is shown in Figure 8.

Figure 8: User activity chart view Home View



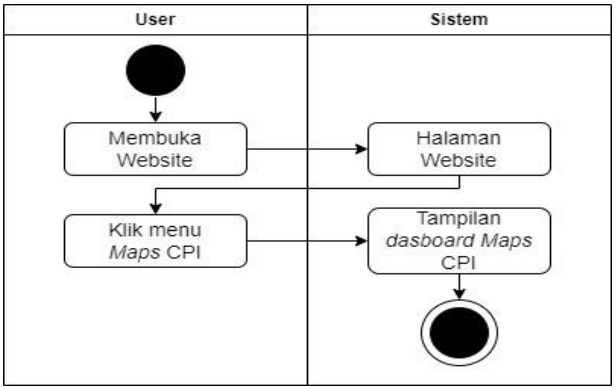
b) A diagram of user activity from the WP Maps page in WebGIS is shown in Figure 9.

Figure 9: User activity chart viewing WP Maps



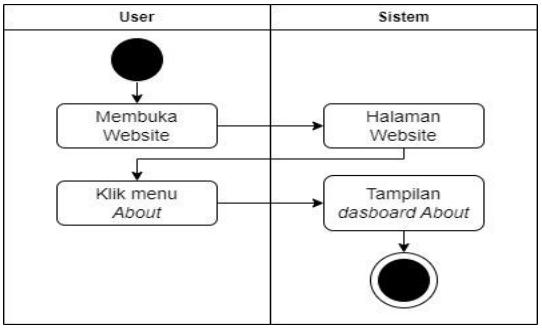
c) A diagram of the activity of users viewing WP Maps pages in WebGIS is shown in Figure 10.

Figure 10: User activity chart CPI map view



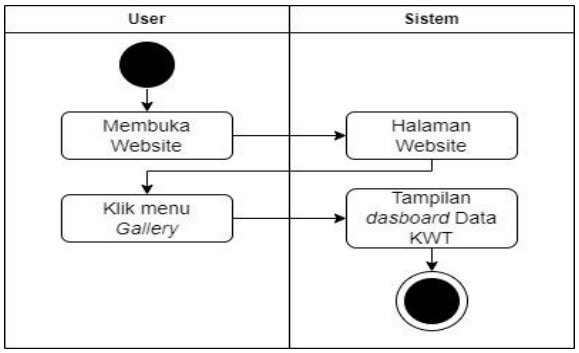
d) The Activity Diagram of the user view page in WebGIS is shown in Figure 11.

Figure 11: About view user activity chart



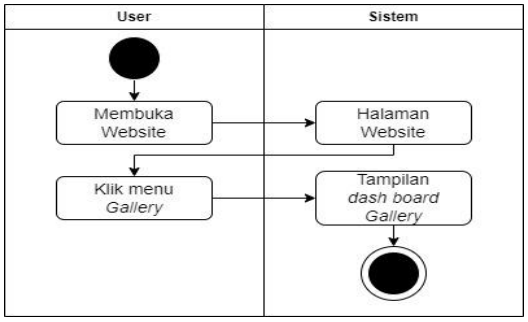
e) The Activity Diagram of users viewing the KWT Data page in WebGIS is shown in Figure 12.

Figure 12: User activity chart view KWT data view



f) A diagram of user activity from the Graphs page in WebGIS is shown in Figure 13.

Figure 13: User activity chart gallery view

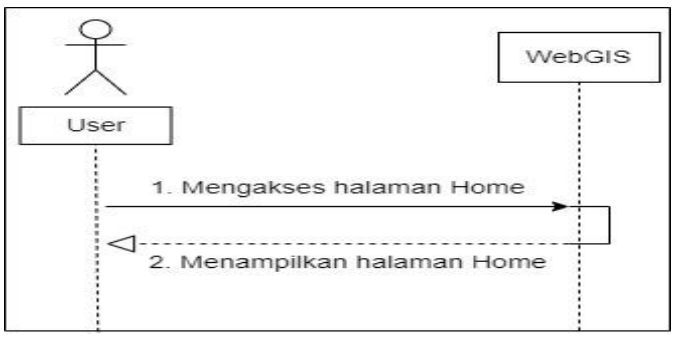


Sequence Diagram

Sequence diagram is the interaction between objects in a system and communication occurs in the form of messages and time parameters. In addition, the sequence chart will also show the message or command that was sent, along with its execution time. Objects related to the course of the process are usually sorted from left to right.

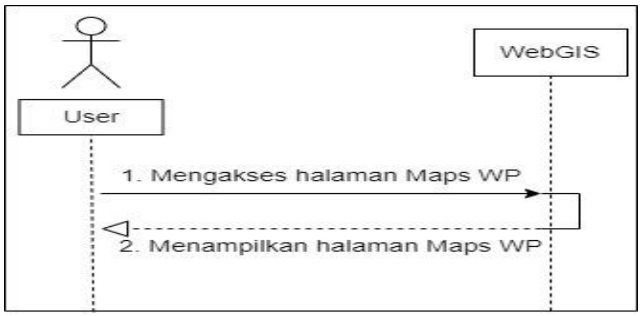
a) A sequential diagram of users to view the Home page is shown in Figure 14.

Figure 14: Sequential Diagram of User View Home View



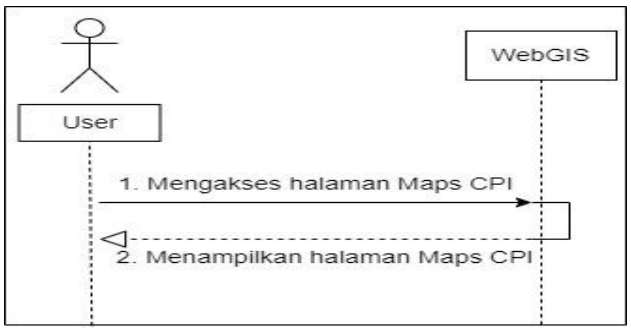
b) The sequential diagram of the user to view the WP map page is shown in Figure 15.

Figure 15: Sequential diagram users viewing WP map view



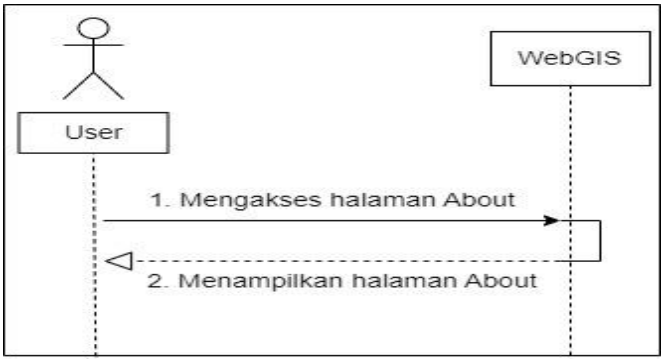
c) The sequential diagram of the user to view the CPI map page is shown in Figure 16.

Figure 16: Sequential chart users view CPI map view



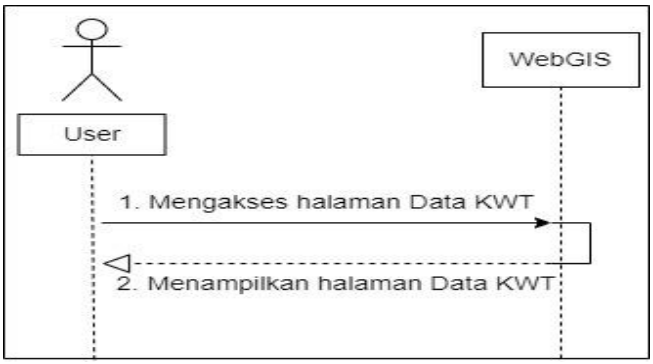
d) The sequential diagram of the user to view the about page is shown in Figure 17.

Figure 17: Sequential chart users view map about view



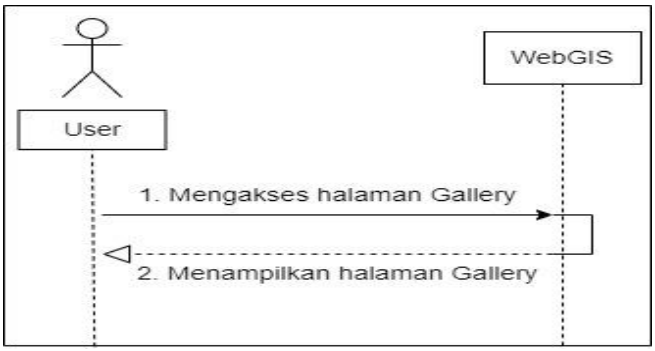
e) The sequential diagram of users to view the KWT Data page is shown in Figure 18.

Figure 18: Sequential diagram users viewing KWT data display



f) The sequential diagram of the user to view the Graph page is shown in Figure 19.

Figure 19: Sequential chart users viewing chart view

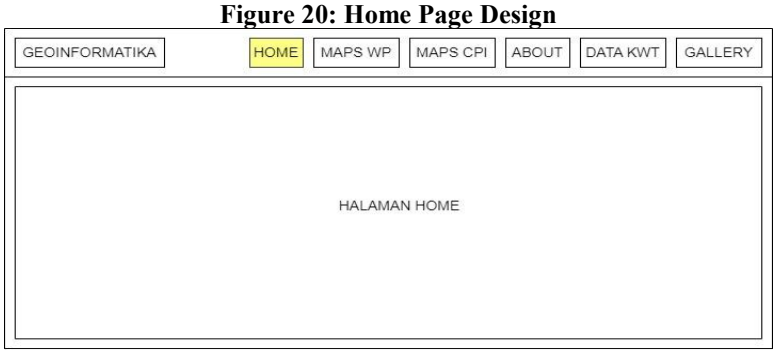


Graphical Design of User Interface

1. Home Page

The Home Page Interface Design displays the starting page when the page is first run, consisting of the Home view, WP Map, CPI Map, About, KWT Data, and Graphs. The interface design of the main page is shown in Figure 20.

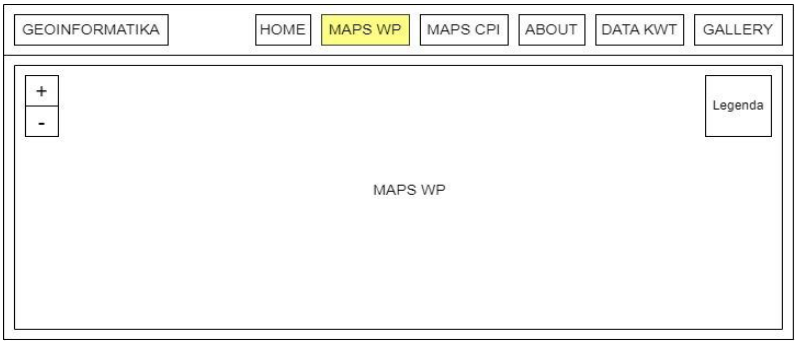
Figure 20: Home Page Design



2. Map page

The WP Interface Menu map design displays the KWT distribution map as a result of the analysis carried out. The design of the WP Menu Interface can be seen in Figure 21.

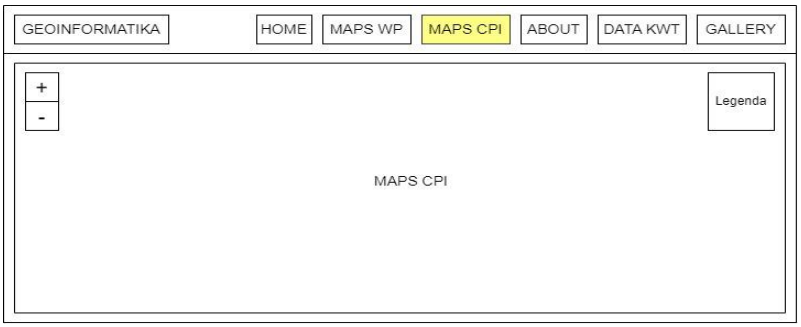
Figure 21: WP map page design



3. CPI Map Page

The CPI Interface Menu map design displays a map of the KWT distribution with the CPI method created. The CPI Menu Map Interface Design can be seen in Figure 22.

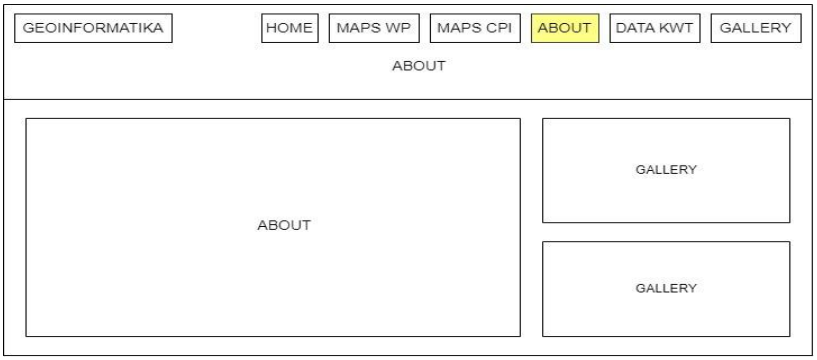
Figure 22: CPI map page design



4. About the Page

The About Interface Menu Design displays information about the City of Bogor and also the Farmer Women's Group. For the design of the About Interface Menu, you can see Figure 23.

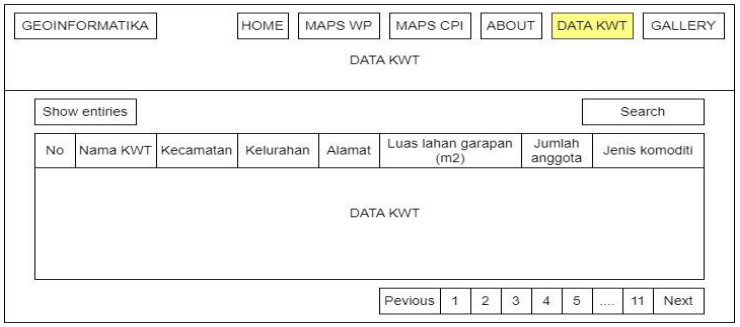
Figure 23: About page design



5. KWT Data Page

The KWT Data Menu Interface Design displays the KWT data table that was created. The KWT Data Menu Interface Design can be seen in Figure 24.

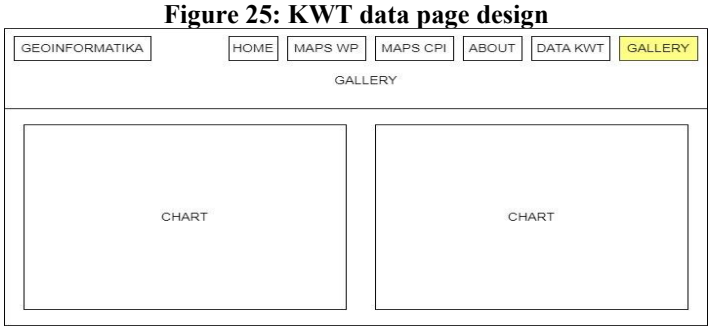
Figure 24: KWT data page design



6. Graphics Page

The Graphic Menu Interface Design displays graphs from the KWT data generated such as sub-district KWT information, the number of KWT based on arable land area, the number of KWT members per sub-district KWT number based on the commodities planted, and the percentage of the number of commodities planted by each KWT. The design of (m^2)the Graphical Menu Interface can be seen in Figure 25.

Figure 25: KWT data page design



APP DESIGN

The application design uses an open source visual studio with a language recognized by the system, namely Hypertext Preprocessor Programming (PHP), Cascading Style Sheets (CSS), the system can be run using an offline server using the XAMPP control panel, and can be used using google chrome or Microsoft Edge, The following is a look from the website.

1. Home page view

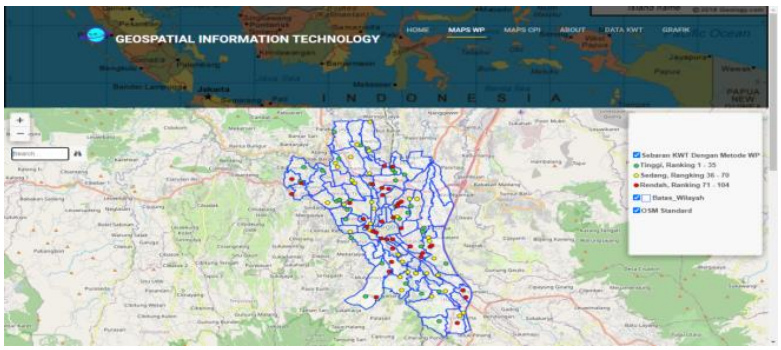
The home page interface display displays the website page that contains the website title. For the Home page interface view, it can be seen as shown in Figure 26 below.

Figure 26: Home page interface display

2. WP maps page view

The WP maps page interface display, displays a website page that contains a map of the KWT distribution using the WP method. For the interface view of the WP Maps page can be seen as shown in Figure 27 below.

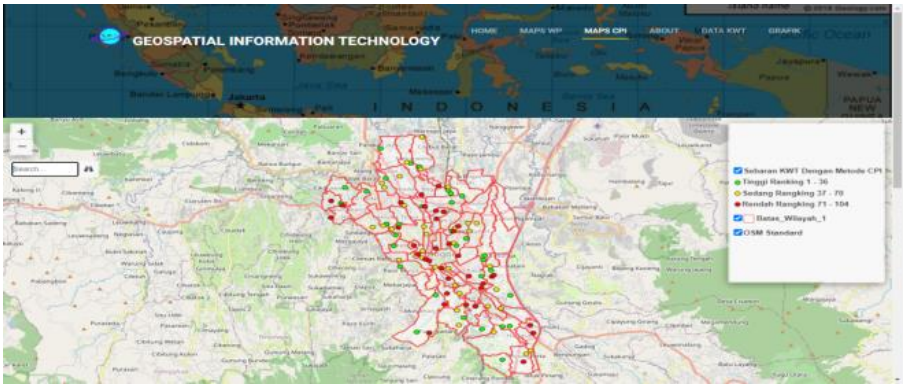
Figure 27: *WP maps page* interface display



3. Map CPI page view

The interface display of the CPI Map page, displays the website page containing the KWT distribution map using the CPI method. For the appearance of the WP Maps page interface can be seen as shown in Figure 28 below.

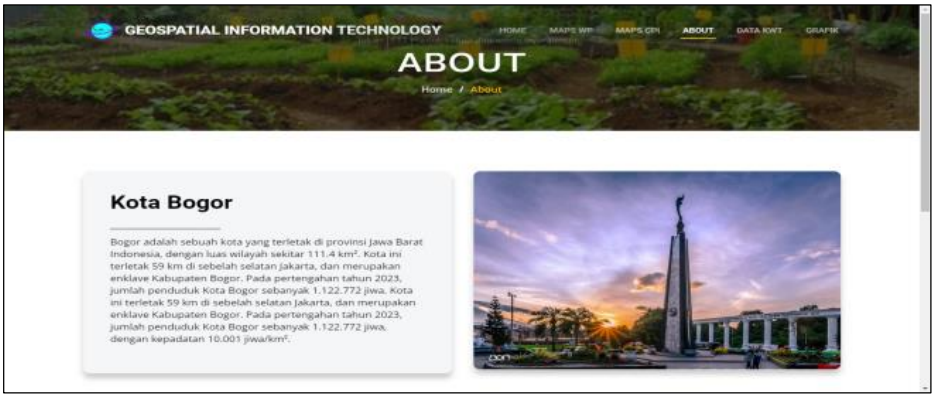
Figure 28: CPI map page interface view



4. About page visits

The page interface display is about displaying a website page containing information about the City of Bogor and also the Farmer Women's Group. For the About page interface view, it can be seen as shown in Figure 29 below.

Figure 29: Interface display page about



5. KWT data page view

The interface display of the KWT Data page, displays a website page that contains information about KWT data in Bogor City which contains, the name of KWT, Regency, City Village, address, area of cultivation land, number of members, and also the type of commodities planted. For the interface view of the KWT Data page, it can be seen as shown in Figure 30 below.(m^2)

Figure 30: KWT data page interface display

6. Chart page view

The Interface Page displays the Graph Page displays a website page that displays a graph diagram containing KWT data such as, Number of KWT per Regency, number of KWT based on the area of cultivation land. The number of members in each sub-district, the number of KWT based on commodities, and the percentage of the number of commodities planted by each KWT. For the interface view of the Graphs page, it can be seen as shown in Figure 31 below.(m^2).

Figure 31: Graphical page interface display

CONCLUSION

A Decision Support System with taxpayer and CPI methods can be applied to assess the performance of KWT in Bogor City. The results of the study showed that KWT Ciharashas ranked first in both methods, with a value of V = 0.0242 (WP) and CPI = 66.60 (CPI). From the results of the calculation of the MSE method, the CPI has an MSE value of 0.3 lower than the WP 0.8, so the CPI is recommended as a more suitable method for this assessment. The distribution map of the Women Farmer Group in Bogor City shows an uneven distribution, with a total of 104 KWT spread throughout Bogor City. The sub-district with the highest number of KWT is South Bogor Regency with 23 KWT, while North Bogor Regency has the least number of KWT with a total of only 9 KWT.

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