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Web Based Social Assistance Distribution Monitoring System Using Waterfall Method

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ABSTRACT

Currently, the Indonesian nation is in a state of economic crisis, many people are affected by the economic crisis. Social assistance is the provision of assistance in the form of money/goods from the government to underprivileged communities, which aims to improve people's welfare and meet the needs of the community in maintaining their lives during the current economic crisis. The village head is one of the government officials as well as officers from the social assistance distribution with the aim of minimizing the problem. A lot of assistance comes but is not evenly distributed to people in need, it is necessary to have a monitoring system for the distribution of social aid programs so that the assistance distributed remains on target and the quality of budget absorption is optimal. The monitoring process will be carried out by the village head directly to monitor the progress of the distribution of aid and submissions. Therefore, this research will build a web-based monitoring system for the distribution of social assistance. This social assistance distribution system in the form of a website, will contain data on recipients of the family hope program and community submission data. The design of this system uses Unified Modeling Language (UML) and the development of the system uses the Waterfall method which will test the system. With this system, it will help the Village Head in monitoring the distribution of aid and assist the community in submitting it.

Keywords: *Monitoring System; Social Assistance; UML; Waterfall; Website*

1. INTRODUCTION

Currently, the Indonesian government is making efforts in carrying out development in various fields and regions both central and regional, some of which are infrastructure development and increasing human resources in various fields. This is done to form a nation that can compete in the international world. The development of the Indonesian state is carried out in the hope of creating and improving the welfare of all Indonesians. The role of the government is not only responsible for the development, but also responsible for overcoming the economy of people who are currently in a state of crisis. The Indonesian government has prepared hundreds of trillions of funds and various social programs and policies to minimize these problems.

One of the programs set by the government is the provision of social assistance by the government to the poor or unable to protect the community from possible social risks, and improve economic capabilities and community welfare. Some of the types of social assistance provided include direct cash assistance, the family hopes program assistance, and non-cash food assistance. (Peraturan Menteri Sosial Tentang Penyaluran Belanja Bantuan Sosial Di Lingkungan Kementerian Sosial, 2019). The existence of this social assistance program is very important for the community because social assistance is one of the model schemes of social protection that aims to meet the needs of the community in maintaining their lives during the current economic crisis.

Social assistance is the provision of assistance that is not continuously and selectively in the form of money/goods to the community which aims to improve community welfare. Social assistance refers to government programs, which provide a minimum level of income support to individuals and households living in poverty. Social assistance is indispensable for people who are less well-off in the economy. The main targets of beneficiaries are Very Poor Households (poorest), Poor Households (poor), and Near-Poor Households (near poor). In providing social assistance, both local governments as social assistance providers and communities/community institutions as recipients of social assistance can be responsible for the assistance per their portion based on applicable regulations (Peraturan Kementerian Dalam Negeri (PERMENDAGRI) Tentang Perubahan Peraturan Menteri Dalam Negeri

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Nomor 32 Tahun 2011 Tentang Pedoman Pemberian Hibah Dan Bantuan Sosial Yang Bersumber Dari Anggaran Pendapatan Dan Belanja Daerah, 2012).

The first research that became the literature in this study was research from Islah Rachmawati, Budi Nugroho, and Henny Endah students and alumni of the East Java "Veteran" National Development University. With the research title "Design and Build a Monitoring and Evaluation Application for Social Fund Distribution in the Web-Based Kediri City Social Service". The study discussed the system in the form of community complaints related to data on recipients of Social Service assistance and has the aim of assisting the Social Service Office in reporting or evaluating social funds as well as monitoring changes in social fund recipients in Kediri City and making it easier for the community to make complaints (Rachmawati et al., 2021).

Next is research by Teguh Hamdala and Sinta Esabella students from Sumbawa University of Technology. With the title "Design and Build Monitoring and Evaluation of Social Fund Disbursements in the Social Service Office of Sumbawa Regency Web-Based". The purpose of creating the system is to assist the Social Service Office in the Field of Facilitation of Protection and Social Security in reporting or evaluating the condition of social funds while also monitoring changes in social fund recipients in Sumbawa Regency (Hamdala & Esabella, 2020).

The last research that became the literature in this study was by M.Noer Fadli Hidayat and Abu Tholib [5] students from Nurul Jadid University. With the title "Android Monitoring System for Utilization of Health Facilities for Family Hope Program in Paiton District, Probolinggo Regency". This study aims to help the companions of the recipients of the family hope program have more intention in monitoring the KPM and also make it easier for the companions of the recipients of the family hope program to get information about the existence of KPM in each activity. (Hidayah, 2019).

From the results of observations, researchers found a problem of unevenness in the distribution of social assistance that had been determined by the government. In the results of the researchers' interviews, it turned out that there were still many poor residents who did not get any social assistance, even though the criteria for these residents were very worthy of receiving social assistance. On the other hand, some residents claim that they have been registered as recipients of social assistance and as a criterion for residents who cannot afford it, but they have never received this assistance. Some residents claim to be shocked when they find out that they are registered as beneficiaries, even though they are among the residents who are still capable in the economy. The second problem is that the recording of data on recipients of social assistance at the Village Office is still manually written on paper so that they are scattered and even torn. The uneven distribution of social assistance caused a stir among the residents and became a big problem for the village.

Based on the above problems and several previous studies, researchers will also build a web-based monitoring system for the distribution of social assistance in village offices. This system is slightly different from previous studies, where this system will monitor the process of distributing social assistance, especially in family hope program assistance ranging from incoming assistance to distributed assistance and also the system will receive approval from the community, where the community can enter personal data as beneficiaries and then the system will process their data. This system was created with the aim that the assistance is divided equally based on the portion and helps the Village Head and the community in the process of submitting data to get assistance.

2. LITERATURE REVIEW

Currently, websites play an important role because they are the fastest source of information that can be accessed anytime, anywhere. Websites are part of technological developments. A website is an information space where useful resources are identified by a global identifier called a Uniform Resource Identifier (URI) (Suendri, 2021). A website is a document in the form of a page that contains text in HTML (Hypertext Markup Language) format. The website is stored on the hosting server and can be accessed through an Internet browser as a URL (Uniform Resource Locator). Web-based applications are designed to meet specific needs. The Social Assistance Monitoring System is designed to make it easier for employees to distribute social assistance and help the community in the application process. This website is designed using the PHP programming language and the Laravel framework.

Developing web applications requires a framework. The framework contains a collection of program code that is collected and organized into well-structured folders for ease of use. Laravel is an open-source PHP framework developed by taylor otwell that began in 2011. This Laravel framework is built with the concept of MVC (Model View Controller) which distinguishes between views and process logic, so that system processing can be divided

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into more specific processes (Suendri, 2020). Laravel focuses on clarity and simplicity in writing and display, as well as producing functional web applications that work.

PHP (Hypertext Preprocessor) which is used as a server-side scripting language in developing Web embedded in HTML documents. The use of PHP allows the Web to be made dynamic so that Web site maintenance becomes easier and more efficient. MySQL (My Structure Query Language) is a database management system software SQL (Database Management System) or DBMS of many database systems such as Oracle, MySQL, Postgre SQL and others (Widia & Asriningtias, 2021).

The system development method used is the Waterfall method, and each stage and sequence of the method is carried out sequentially and continuously like a waterfall (Wahid, 2020). This development model takes a systematic and sequential approach. It is called a waterfall because each stage passes through stages which must wait for the previous stage to finish before continuing sequentially (Sutinah et al., 2018). This development model is linear starting from the early stages of system development, the planning stage, to the final stage, namely the maintenance stage.

3. METHOD

Research Stages

System research stage:

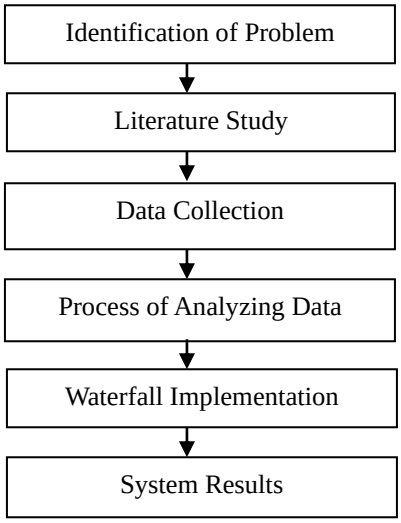

Fig 1. Research Stages (Ikhwan & Aslami, 2022)

Identification of Problem

The problem that has been identified in this study is that there is an unevenness in the distribution of social assistance that has been set by the government so there are still many poor residents who have not received it and there are also some residents who are categorized as capable but get the assistance.

Literature Study

Literature studies, it is carried out by looking for various written sources in the form of archives, journals, and relevant documents per the topic of discussion to be discussed (Ikhwan & Aslami, 2022).

Data Collection Techniques

Several data collection techniques:

Observation

Observation is to make a direct observation of the symptoms investigated. At this stage, researchers make field observations by looking directly at the situation and living conditions of the people in the village. Researchers

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collect the necessary data per the subject matter discussed by visiting directly the villagers as well as the village office.

Interview

An interview is an oral question and answer between two or more people directly with a specific purpose. At this stage the researcher conducted direct questioning and answering with several poor villagers who did not receive any social assistance, such as Mrs. Linda Yani's family, Mrs. Yatiem's family, and Mr. Jumono's family. This stage aims to obtain correct and accurate information so that there are no intersections in the distribution of social assistance (Fikri et al., 2022).

System Development Techniques

System development is carried out by means of Waterfall:

Requirements Analysis

At this stage is the stage of analyzing the need for data needed in the process of designing a monitoring system for the distribution of social assistance. The required input documents are admin data, data on existing beneficiaries and data on residents who are not yet in the beneficiaries. Admin data consists of a username/id and password, while the interface that will be made is the main page with the admin login menu, then the home page, the assistance program page, the submission process page, the ranking page, submission reports received, submission reports rejected and users.

Design

After completing the system requirements analysis stage, the researcher designed the system design by applying a use case diagram.

Implementation

At this stage after completing the design, the program is translated into a programming language. The programming languages used are PHP, Laragon, MySQL, and Visual Code. Then the implementation stage results from the design of a pre-designed system that will be used as a web program.

Testing

In this stage, the system will be integrated and tested as a complete program to ensure that the program meets the existing requirements (Rahmawati et al., 2021).

Maintenance

This stage is the last process, if the previous stage of the system is worth testing for use then the installation of the system is carried out. This stage is also interpreted as a form of responsibility to ensure whether the system can run smoothly and also improve the capabilities of the system. (Khairina & Irawan, 2022).

4. RESULT

Use Case Diagrams

Use case diagram is a diagram that explains how the system will be built and the activities that will be carried out by the actor as the user from the point of view of the object as the user of the system (Wahyudi & Wijaya, 2020).

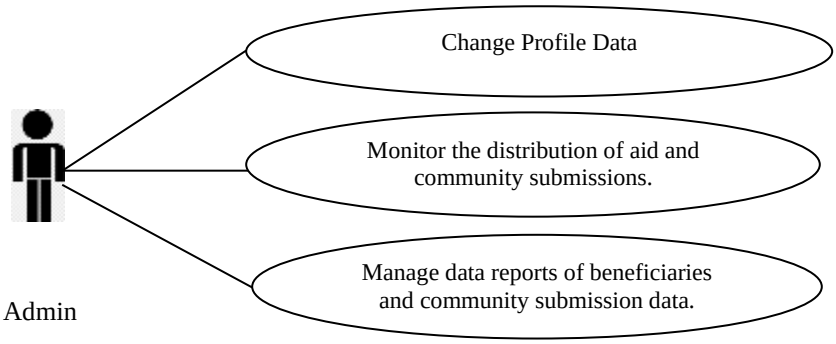

Fig 2. Use Case Diagram Admin

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In figure 2. The admin workflow is that admins can change user profile data, can then monitor the distribution of assistance and community submissions, and can manage data reports of beneficiaries and community submission data.

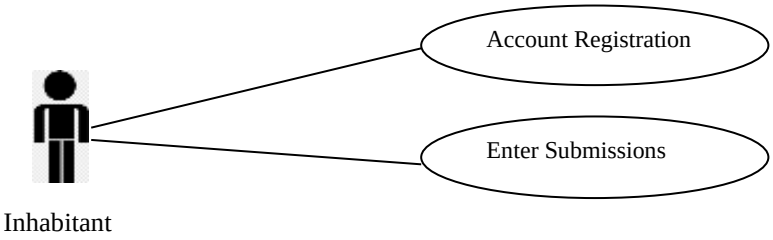

Fig 3. Use Case Diagram Inhabitant

In figure 3. The community's workflow is that people can register their personal data on the website, then the community enters the submission data according to the instructions from the website.

Database Design

Database design is a database component that is described in the form of a relational entity diagram. Entity Relationship Diagram (ERD) serves to create a logical database modeling (Syaidaturrahmi, 2022).

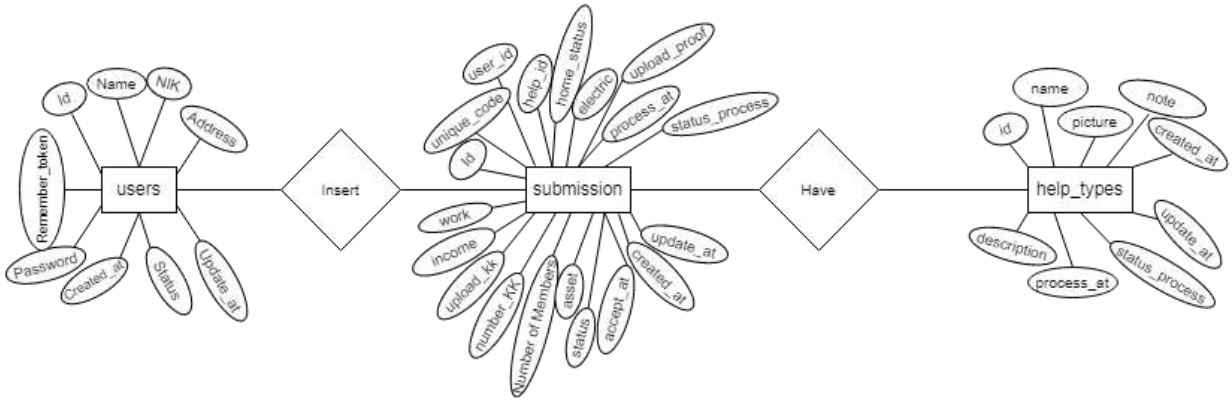

Fig 4. Entity Relationship Diagram

In figure 4. The attributes on the Users entity will be linked into the submission entity. Furthermore, the attribute on the Help type entity has a relationship with the submission entity.

Implementation

Test Results

Social Assistance Distribution Monitoring System was tested using black box testing that focused on functionality available on the system.

Table 1. Black Box Testing

No	Testing Section	Testing Skenario	Expected Results	Testing Results	Status

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1	Register	User enters data on the registration page	User goes to login page	Login page appears	Success
2	Login	admin and user enter NIK and Password	Admin and Users will go the main menu	Main page appears	Success
3	Profil Account	User select account	System displays the account profile	Account page appears	Success
4	Home Page	User select home page	System displays data on accepted and rejected community submissions	Home page appears	Success
5	Program	Admin select program menu	System displays social assistance programs	Program page appears	Success
6	Submissions Process	Admin select submissions process menu	System displays submissions process	Submissions process page appears	Success
7	Submissions Accepted	Admin select submissions accepted menu	System displays submission accepted	Submissions accepted page appears	Success
8	Submissions Rejected	Admin select submissions rejected menu	System displays submissions rejected	Submissions rejected page appears	Success
9	User	Admin select user menu	System displays the data of the referrers	Data of the refferers page appears	Success
10	Logout	Admin and User select logout button	Admin and users logged out system and show login page again	Login page appears	Success

In Table 1 above, the end of testing the social assistance distribution monitoring system with a black box is that no errors or bugs are found in any functional testing process of the website application. The social aid program monitoring system can function properly and can be accessed in the form of a website.

Login Page

Display of the login page of the social aid monitoring system website

Fig 5. Login Page

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In figure 5 The login page display, for users who already have an account, then immediately fill in the username and password in the fields that are already available and click Login. If you don't have an account, then the user can register their data by clicking the words 'I don't have an account' and then enter the data in the column that is already available.

Home Page

Main page view of social aid monitoring website

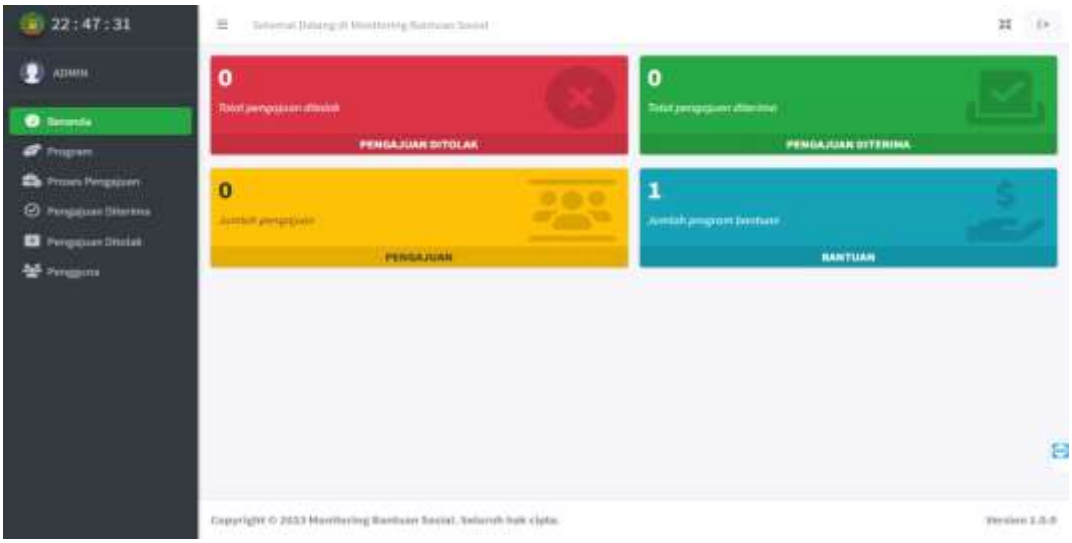

Fig 6. Home Page

In figure 6 on the main page display, there are home features, program features, application process features, submissions accepted, submissions rejected, and user features. The home feature contains all reports of community submission data, submissions that are rejected and accepted as well as incoming assistance data. Admins can change profile data and manage their report data.

Program Page

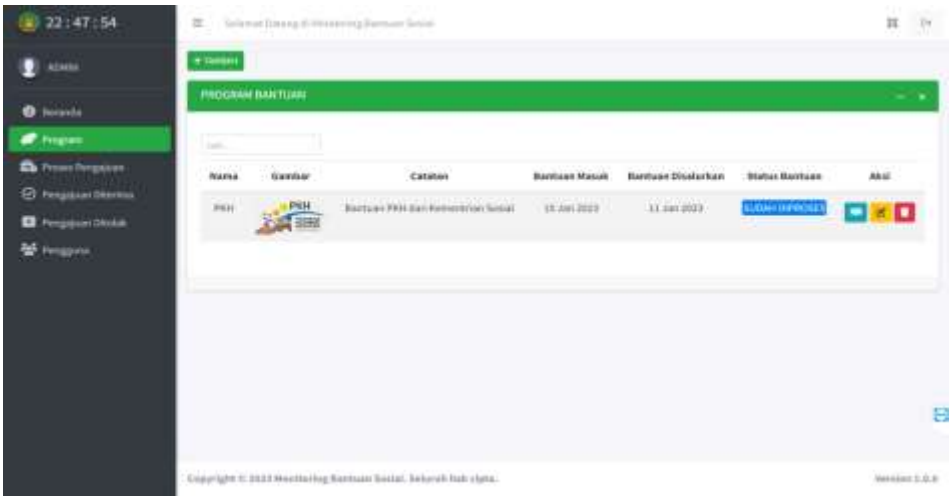

Fig 7. Program Page

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In figure 7. In the Program Features view, admins can manage and monitor incoming help program data until submitted. Admins can also add more help to the feature by clicking the add button in the upper-left corner. The program feature will display the type of assistance that came in, starting from the date of entry of assistance to the date of delivery of assistance to the community.

Submissions Accepted Page

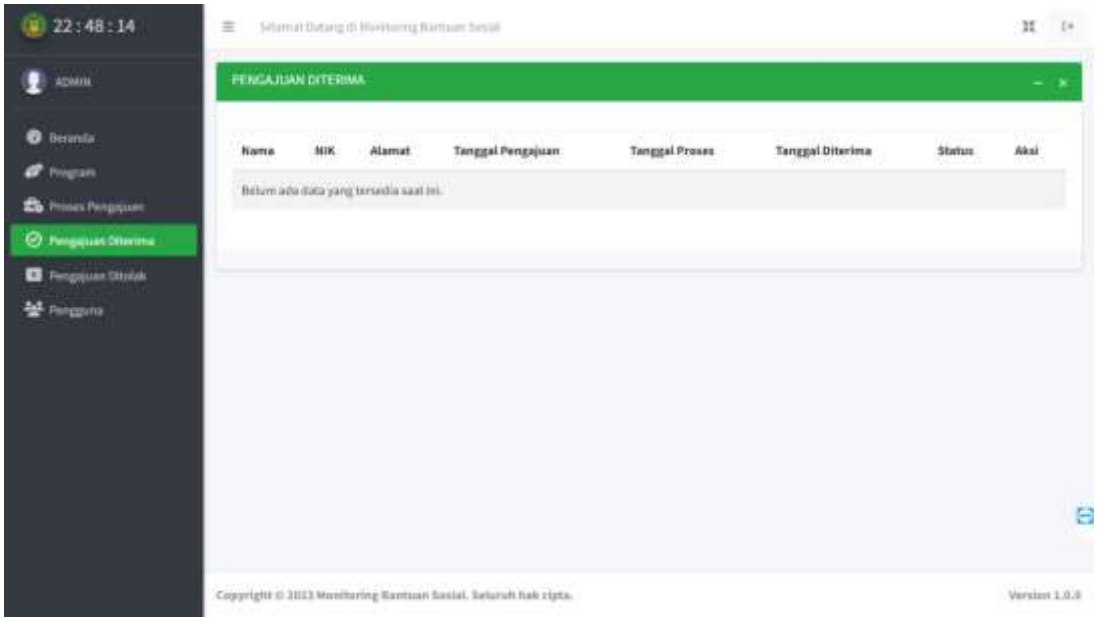

Fig 8. Submissions Accepted Page

In figure 8. There is a display of the application process feature, the submission accepted feature, the rejected application feature, and the user feature. In the submission process feature, admins can monitor community submission data that has been registered. Admins can add community data requests by clicking the add button, then fill in the data according to the fields that are already available. In the submission received and submission rejected feature, admins can monitor the flow of verification of submission data from the community. The user feature will display who are the users who have registered their data.

DISCUSSIONS

This social assistance distribution monitoring system will monitor the progress of social assistance distribution and community submissions. Where this system uses two users, namely admin and community, the admin will manage the data on the system and the community can make submissions. In this system, there are several features used such as the homepage feature that will display the overall data report, the program feature that will display entry assistance, the application process feature that will display the flow of the community submission process, the accepted and rejected submission feature that will display the name of the community who has submitted personal data and the user feature that will display the data of users who have registered. In this study, the data needed by the system was obtained directly from the village office and the results of interviews with local communities. The advantage of this system is not only monitoring the distribution of aid but can be used by the community in applying as recipients of social assistance. This monitoring system also uses the waterfall development method so that each flow in the system is made clearly and in more detail.

5. CONCLUSION

With the monitoring system for the distribution of social assistance, it will assist village office employees in monitoring and distributing assistance to the community. There is a program feature that helps village heads or

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employees in monitoring, in the program feature will monitor the progress of aid distribution starting from incoming assistance to being received by the community. And there is a submission feature that makes it easier for people to submit their data as beneficiaries. The hope is to build this monitoring system to minimize inequality and irregularities in the distribution of social assistance to the community.

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