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Infrastructure maintenance system for community development projects to improve the quality of infrastructure services in West Sumatra Province

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Abstract.

This research study is about the maintenance system of infrastructure outcomes through community development projects. Operations or utilization activities are ways to use infrastructure and facilities by their function to improve the quality of life of people in their environment. While maintenance is an effort to keep the foundation and facilities built or existing to function according to its function and have a longer service life. This is qualitative research with descriptive method. Data collection was done by interviews, focus group discussions (FGD), field observations, and documentation studies from community development Program (Program Dana Desa, Kotaku, Pamsimas, Sanimas, PISEW) in West Sumatera Province. Interviews are carried out to the government program counterparty/work unit, consultants or field facilitators, and society who beneficiary and maintenance the infrastructure. The results showed that the infrastructure maintenance process began with the formation of operational and maintenance groups, technical training of operational and maintenance groups, preparation of technical documents for operation and maintenance, implementation of operation and maintenance activities. The infrastructure maintenance process is effectively implemented in the community-based water supply and sanitation program (pamsimas) or clean water infrastructure. The constraints encountered in the field are that the level of public awareness of the infrastructure being built still lacks, especially for urban areas, there is no salary for the operational and maintenance groups and the limitations of Human Resources in the Community, quite a lot of administrative regulations, high mobilization or replacement of facilitators and unsustainable program assistance.

1. Introduction

Infrastructure development is an integral part of regional and national development. Infrastructure is the moving force of economic growth. Transportation sector activities are important of the distribution pattern, both goods, and passengers. Other infrastructure, such as electricity and telecommunications, that related to modernization efforts to provide one of the most important aspects to increase the productivity of the production sector. Availability of housing and settlement facilities, such as clean water and sanitation for widely and evenly with sustainable management will increase the level of community welfare.

One of the ways that the government does to accelerate infrastructure development for poverty reduction is through community development programs. Currently the programs that are being carried out in Indonesia are the Village Fund Program (Program Dana Desa), the City without Slum Program



(Kotaku), the Community Based Sanitation Program (Sanimas), Regional Socio-economic Infrastructure Development Program (PISEW), the Community Based Water Supply and Sanitation Program (Pamsimas) and other programs. West Sumatra Province is one of the provinces that have been allocated for these programs.

For West Sumatra Province in 2016, the Village Fund Program allocation was 740 billion. In another hand, the Community Based Sanitation Program funding allocation for 2017 in ten City Regencies in West Sumatra Province is Rp. 23.3 billion. The City without slums Program was allocated of funds for the Province of West Sumatra in 2017 is Rp. 22,650 billion. With a large amount of funds budgeted for infrastructure community development program in West Sumatra Province, it is necessary to have research to answer the question of how well the infrastructure maintenance system has been built.

2. Literature Review

The general definition of infrastructure project is a series of planned activities and carried out sequentially with logic and uses many types of resources, which are limited by the dimensions of cost, time, and quality. Basically, a project is developed from an idea to realize something, with the following sequence of activities :

The development of a project starts from the concept until it becomes an output (building), generally through six stages:

- **Concept and Feasibility Study**
Construction project starts with a need for a new facility. Before the design phase begins, an idea is directed at planning. At this phase analysis of the concept, research on the technical and economic feasibility and environmental impacts is carried out.
- **Engineering and Design**
At this stage, basic concepts are developed and detailed drafting in the form of images complete with specifications.
- **Project Procurement**
Procurement of materials and equipment needed in the process of implementing the development is carried out.
- **Project Implementation**
The transformation of the designs and specifications made by the planner is realized in physical form.
- **Work starting and Implementation**
This phase includes all the testing, adjusting and repairing of electrical and mechanical systems to make the systems can work normally. Usually, this phase also involves a guarantee period.
- **Operational and Maintenance**
The implementation documents are collected, examining or repairing the damages that occur, making operational instructions and maintenance guidelines. In addition, it also trains staff to performed maintenance.

Community development is a concept related efforts to develop the community towards a positive direction. Community development as a matter that has the center of attention in helping people at various age levels to grow and develop through various facilitation and support so that they can decide a plan and take action to manage and develop their physical environment and social welfare [1]. This process takes place with the support of collective action and networking developed by the community. Community development is a tool to make society more complex and growing strong. This is a social change where society becomes more complex. Local institutions grow, collective power increases and qualitative changes occur in the organization [1].

The process of community empowerment should be accompanied by a team of facilitators who are from a multidisciplinary background [1]. This companion team is one of the external factors in community empowerment. The role of the team at the beginning of the process is very active but will

gradually decrease during the process until the community has been able to continue its activities independently. In its operations, the initiative of the community empowerment team (PM) will be slowly reduced and eventually stopped. The role of the PM team as a facilitator will be fulfilled by the group management or other parties who are considered capable by the community. The timing of the PM team's withdrawal depends on a joint agreement that has been set since the beginning of the program between the PM team and the community members. Based on some experiences, it is reported that the withdrawal of the PM Team can be done at least 3 (three) years after the process begins with the socialization phase. Although the team has retreated, its members continue to play a role, namely as advisors or consultants when needed by the community.

In infrastructure community development projects, those who act as planners are the people themselves who are accompanied by technical facilitators. As a contractor, also the community itself, both self-managed and done by the third person.

Table 1. Differences of conventional infrastructure projects with community development infrastructure project

No	Description	Conventional Infrastructure Project	Community Development Infrastructure Project
1	Selection of the type of project to be built	It is determined by the Government or certain parties according to the existing mechanism	Determined based on the results of community meetings
2	Planning	Consultant	The community is facilitated by Technical Assistance
3	Construction	Contractor or winner of the tender	Community groups formed by citizens
4	Monitoring and Evaluation	Institutions/people who are professionals in the project area	Community, Field Assistance and related institutions
5	Project Characteristics	Profit, meaning that there are material benefits for the parties involved in it	Non-Profit, implementing community groups do not get material benefits directly. The benefits of getting benefits from the infrastructure built

3. Research Methods

This research is qualitative research with descriptive method. Bogdan and Taylor stated that qualitative methodology is a research procedure that produces descriptive data in the form of written or oral words from people or actors observed [2]. Qualitative research is direct research into the background of the research, conducting direct observation, open interviews, and documentation analysis. To complete data of this research focus, researchers used data collection techniques below:

- Documentation Study

Before conducting interviews, researchers collected data on general and implementation guidelines for infrastructure maintenance in community development programs (Dana Desa, Kotaku, Pamsimas, Sanimas, Pisew). This guideline is obtained through the program website and government program unit or program consultant/facilitator. The utilization and maintenance guidelines in printed version were only in the Kotaku, Pamsimas and Sanimas programs. From the data above, a list of interview questions was made for all program. The list of questions had differentiated for each respondent. The respondent consists of the Community and Village development Office of West Sumatra Province, the government program unit, consultant or facilitators, operational and maintenance society groups.

- Open Interview and Focus Group Discussion (FGD)

The interview technique used is structured interviews and unstructured interviews. Researchers make a list of questions for relevant stakeholders. Researchers will add a list of questions from respondents for a deepening of the answers to the list of questions that have been made previously for data sharpness. Interviews for related stakeholders are conducted at the respondent offices in Padang City, Padang Pariaman District, Payakumbuh City, Limapuluh Kota Regency, and Tanah Datar Regency. Focus Group Discussion (FGD) is carried out when more than 3 (three) respondents meet. In this study, FGDs were conducted 5 (five) times.

- Observation

Field observations are used to see the physical condition of the existing infrastructure by taking samples from each program. For the village fund program, field observations were conducted in Padang Pariaman regency, the City without Slums program in Padang city, the community-based water supply program in 50 Kota regency, the Sanimas program in Padang City and Payakumbuh City, and the Pisew program in Tanah Datar regency.

This research uses an interactive model data analyze from [3]. Activities in the qualitative data analysis are done interactively and continue continuously until complete, so the data is saturated. The interactive model is meant as below:

- Data reduction

All data obtained is reduced by summarizing, selecting and focusing data. At this stage, researchers reduce data by sorting, categorizing and making abstractions

- Presentation of Data

The data that is reduced is presented in the form of interview notes, field notes and documentation notes so that researchers can analyze it easily

- Conclusion / Verification

Based on the data that has been reduced and presented, the researcher makes conclusions which are supported by strong evidence at the data collection stage. The conclusion is the answer to the formulation of the problem and the question that has been expressed by the researcher from the beginning.

4. Result and Discussion

Operations activities are ways to use infrastructure and facilities in accordance with their function to improve the quality of life of people in their environment. While, maintenance is an effort to keep the infrastructure and facilities built or existing to function according to its function and have a longer lifetime.

4.1. Village Fund Program (*Dana Desa*)

Village Funds are funds sourced from the State Revenue and Expenditure Budget allocated for Indigenous Villages and Villages that are transferred through the District / City Regional Revenue and Expenditure Budget and are used to finance governance, development and community empowerment. Based on Government Regulation No. 60 of 2014 concerning Village Funds sourced from the National Budget. The extent of the scope of village authority and to optimize the use of Village Funds, the use of Village Funds is prioritized to finance development and empowerment of rural communities. The Village Fund Program in West Sumatra Province is in 12 Regencies and two cities with allocations in accordance with the finance ministry. In 2016, the implementation of infrastructure development was carried out by the contractor with simple procurement. In 2017, infrastructure development held by the community through cash-intensive work programs. All funds allocated to the village by involving the community with the criteria of workers come from unemployment or families who have problems with malnutrition. In 2018, the village fund allocation was 790 billion for 12 regencies and two cities. Funds are sourced from the National Budget with a ceiling of funds each village 700-800 million. Disbursement of funds is done through 3 (three) times, namely stage 1 by 20%, stage 2 by 40% and

stage 3 by 40%. Activities are in accordance with the action plan that has been compiled in the Village Expenditure Budget (Village Budget). The implementation of infrastructure activities in the village is accompanied by two-person technical facilitators (local village facilitators).

After the infrastructure project finished, the buildings results are handed over to the village government. Technical for operation and maintenance, including funding managed by the village government. The Village government have a development work unit to do it. However, until to date, in general, there are no villages that provide budgets for maintenance because there are still need many funds to build other infrastructure. Based on field conditions, for implementation of maintenance done by the community with monthly mutual assistance. There are no technical documents regarding infrastructure maintenance. In this program, the community is also not provided with a guidebook on the use and maintenance of infrastructure.

From previous research, it was revealed that the current tendency in the community is a reduction in community participation in empowerment-based infrastructure activities. Research on the effectiveness of community empowerment in post-tsunami District Development Program management in Lhoknga District, Aceh Besar District [4], states that program management is less effective in improving the conditions of community empowerment. Ineffective community empowerment is mainly due to the typology of community empowerment.

4.2. The city without Slums Program (Kotaku)

The City without Slums Program is a program that is implemented nationally in 269 cities / regencies in 34 Provinces which become a "platform" or base for slum handling that integrates various resources and funding sources, including from the central, provincial, city/district governments, donors, the private sector, the community and other stakeholders. Kotaku intends to build an integrated system for slum handling, where local governments lead and collaborate with stakeholders in their planning and implementation, also prioritize community participation. The program was originally named Urban national community empowerment program and is expected to become a "collaboration platform" that supports the handling of slum areas covering an area of 38,431 hectares. It performs in stages throughout Indonesia through capacity building of local governments and communities, institutional strengthening, planning, infrastructure improvements, and basic services in city and community level, as well as technical assistance to support the achievement of the 2015-2019 Medium-term National Government Development Plan target, namely alleviating urban slums to 0 percent.

Research on the evaluation study on the implementation of rural contract-based infrastructure development projects (case study of the integrated poverty reduction program in 50 Kota Regency, West Sumatra Province) [1], shows that overall program/ project governance is still not good with the discovery of various funding problems, and the project is not completed in accordance with the initial planning.

The operational and maintenance in this program was started by a formation of the group of operational and maintenance, that named KPP. This group begins with providing an understanding to the community of the importance of the organization implementing the operation and maintenance of the infrastructure that has been built and the need for the role of the community in these activities. The KPP formation flow is as follows: Socialization of member of this group, make infrastructure classification, an overview of utilization groups, O & M Group Identification, Assessment of Group Capacity and compile documents how to manage maintenance activities. In this program, the routine maintenance didn't implement as planning. Maintenance will be done when severe damage occurs or when the infrastructure can't be used. The social awareness to maintenance infrastructure is still low, the cause of the activity of urban society is high.

4.3. The Community Based Water Supply and Sanitation Program (Pamsimas)

Provision of Community-Based Water Supply Program is a program that aims to improve access to clean water and sanitation services for the rural poor, especially communities in disadvantaged

villages and peri-urban communities that have a prevalence of water-related diseases and have not yet got access to clean water and sanitation services. In more detail the Pamsimas program aims to:

- Improve the practice of clean and healthy living in the community.
- Increase the number of people who have access to sustainable clean water and sanitation.
- Increasing the capacity of local communities and institutions (local governments and communities) in the implementation of community-based clean water and sanitation services.
- Increasing the effectiveness and sustainability of the long-term development of the community-based clean water and sanitation facilities and infrastructure.

The operation and maintenance of the pamsimas program, it is formed a group for the Management of Water Supply and Sanitation Facilities that named BPSPAM. BPSPAM's organizational structure consists of the Chairperson, secretary, treasurer, technical section, sanitation section, and health section. To be able to manage clean water and sanitation infrastructure, BPSPAM receives technical training in utilization and maintenance, technical training in financial management and technical reporting training. Support guidelines for the implementation of BPSPAM activities are provided by pamsimas programs in the form of booklets. BPSPAM also received intensive assistance from consultants/facilitators. BPSPAM also has district associations that are directly facilitated by the local government.

For technical improvements in clean water infrastructure, there are guidelines as follows:

- Operations and maintenance activities are activities that are arranged regularly (periodically) where have funds planning to keep the facilities that have been built can still function properly. Improvements can also be made at any time (incidentally) if needed to keep SPAMS functioning
- Utilization of clean water and sanitation facilities is closely related to how to conduct operations and maintenance so that society need to obtain knowledge about the operation and maintenance of their facilities.
- Operations and maintenance that are good and right refer to the type of facility being built. Each building facility built has different functions and uses.
- The quality and quantity of the clean water supply system is the responsibility of the community together with the designated management body.
- The easier the use of clean water facilities, the higher the effectiveness of the use and sustainability of service facilities.
- The ease of technology and availability of material (for replacement if there is damage) will facilitate operation and maintenance of facilities.

The operational and maintenance steps of clean water can be divided into two supply systems, namely: piping and non-piping systems.

- Piping
The piping system is a clean water distribution system that uses pipes or closed channels starting from the water transmission and distribution pipes to customers. For example the system of transmission and distribution of clean water from water sources (springs and bore wells) to customer groups in the form of public hydrants, public taps, and house connections.
- Non Piping
The non-piping system is a system that does not use piping in distributing clean water to customers. This system can be in the form of shallow wells, hand pump wells, rainwater storage tanks, water terminals or local spring protection buildings.

The first activity organizes by BPSPAM after construction was to build the connection of clean water to homes. For that, planning is needed that involves all users of clean water. Every month, monthly fees will be collected according to the cubic of clean water for each house. Monthly contribution collection works with the local village cooperative. One of advance innovation of BPSPAM, they innovate by creating a management system like the one in the Regional Water Supply Company

(PDAM). The current condition of clean water infrastructure is still going well. BPSPAM has also received excess funds that can be contributed to the construction of villages and social activities.

4.4. Sanitation Community-Based Program (Sanimas)

This program is an environmental quality improvement program in the field of sanitation, especially wastewater management which is destined for urban poor slum areas by applying a community empowerment approach. Sanimas or Community Based Sanitation is a non-project program, Community-based sanitation guidelines are intended as a reference for stakeholders or community groups, NGOs, the private sector and government in organizing community-based sanitation activities.

From the type of funding sources, the sanimas program is divided into 3 clusters, that is:

- Regular Sanimas / Islamic Development Bank (IDB) Loan
Development funds and assistance come from foreign loans (loans) with a per-activity fund allocation of Rp. 425 million. Companion consultants from the central level to the village.
- Funding by National Budget
Funding sources derived from the national budget managed by each Regency/City under the public works agency. Companion facilitators were recruited by the local government. The amount of funds per activity is around Rp. 500 million.
- Sanimas Special Allocation Fund (DAK)
This fund is allocated to certain regions with the same management as APBN funds. The amount of the activity fund is Rp. 480 million.
The difference in utilization and maintenance based on the above sources is for loan funds there is no handover of assets to the local government because it directly goes to the community. Likewise, for funds originating from the APBN and DAK, the handover will be done first to the regional government.

At the planning phase, one of the efforts to the sustainability planning of the Sanimas program explains the readiness of the citizens to be able to utilize and maintain built-in facilities within the Community Work Planning. Therefore, it is necessary to establish an organization that will be responsible for the maintenance and operation of facilities. The organization is a sanitation operational and maintenance group (KPP). The formation of the KPP can behold in the same time with the establishment of Implementation Group or no later than two weeks after the establishment of a self-help group, and is determined by the head of the village and its known by the head of the district. The facilitator assisted community facilitates the formation of the KPP to involve the KPP in planning activities including planning the mechanism for the management of built sanitation facilities, planning the calculation and contributing to the utilization of each period according to the agreement. In carrying out its duties and functions, KPP must be a legal entity. This will greatly assist KPP in developing themselves in the effort to manage the use and maintenance of sustainable sanitation facilities.

KPP administrators are partly from Implementation Group who are directly involved in planning and building sanitation facilities on the results of the agreement of the beneficiary citizens. The main tasks of KPP are as follows: Plan about the amount of contribution to use of facilities, Collect fees, make shopping plans, record and regularly report operations and maintenance, operate and maintain physical facilities, control all piping channels regularly, develop service quality and a number of facilities and conduct a PHBS campaign. In order to the management, it is necessary to prepare a Standard Operating Procedure (SOP) that will be a reference. In addition to SOP, for operational activities also needed articles of Association/bylaws. The SOP and articles of Association/bylaws are prepared by the KPP, and It manages together with the beneficiaries, discussed together in a community consultation forum and after reaching a consensus agreed by the village head.

The results of field observations indicate that maintenance implementation has not gone well. There are several communal MCK buildings built in the area of the place of worship (mosque/mushollah). This is done because of lack of land and easy to maintain the infrastructure. The direct management of the worship place becomes KPP, and the building is well maintained. However,

some others are not well maintained. There is no documents plan for operational and maintenance implementation. Many program locations are in urban areas with limited land. The sustainability of users and maintenance depends on the activeness of the local community. The low level of concern of the urban community causes the building to be repaired only when it is severely damaged.

This is in line with the results of [5] research for the location of the Community Based Sanitation program (Sanimas) in the years 2008 and 2009 implemented in Jember District, obtained from the physical aspects of the MCK WWTP buildings from 8 locations, only 3 locations that are still good. Value of WWTP efficiency is > 50%. Based on the aspect of utilization there are still many users who do not utilize the MCK IPAL facilities.

4.5. Regional Infrastructure and Economic Development Program (PISEW)

This program is under the Ministry of Public Works through the Directorate of Human Settlements which is expected to create and improve the quality of life of the community both individually and in groups so as to solve various problems related to poverty and underdevelopment in the village with the previous name Rural Infrastructure Development Program (PIIP). The decision-making process of regional socio-economic infrastructure development plans involves representatives of the community and government according to their respective functions. The participatory planning mechanism consists of planning in one priority area based on potential and coordinative planning in the district. The target area of the PISEW Program is an area consisting of village centers and buffer villages in one sub-district. The central village is a developing village that has the potential including: as a service center (having a strategic geographical location), a village of production centers or villages collecting raw materials, etc. Implementation of the determination of priority area locations based on the potential carried out by the Regency Team together with the District Government. Especially for sub-districts that have special characteristics in the administrative structures of the region, in compiling the area according to the applicable laws and regulations and the equivalent of the village administration structure, however, it is still consulted with the Provincial and Central Implementation Teams. The District Implementation Team can propose additional members in the team if deemed necessary, and make it possible as resource persons for certain technical fields, as well as in the fields of economics and social sciences. Based on the results of the determination of the area, the determination of the area based on priority and alignment of the Regency Spatial Plan, the area that is in accordance with the objectives of the PISEW Program activities and the results document of the District development planning discussion. Furthermore, the results of the determination of the PISEW Program area were made an official report that was known by the District Implementation Team.

After the implementation of the construction completed, the handover of work does between the construction committee and Rural Province Government Unit. Then the infrastructure assets will be handover between the Settlement Area Proxy of Budget User Province and the District Government as the users and maintainers of infrastructure is built. The location of PISEW activities every year is always different, monitoring only until the infrastructure was built. Therefore, users and maintenance are handed over to the local government. In the implementation at the community level, there is no maintenance plan document. The preparation of plans for utilization and maintenance activities carried out by the regency government together with the Village government on the infrastructure location was built by being accompanied by the Facilitator. Basically, the sources of funding for utilization and maintenance are the people who use the infrastructure based on mutual cooperation and the awareness that the maintenance, repair, and development of infrastructure is the joint task of all beneficiaries, can also be sourced from the village budget and expenditure budget. Village head supports funding assistance sourced from the Village Budget as outlined in village regulations and adjusted to the capabilities of each target area. Until now, the maintenance only does when the infrastructure heavily damaged. Based on research conducted by [6] on Evaluation of Community Empowerment Activities in the Rural Infrastructure Development Program (PIIP) in West Nusa Tenggara Province shows that the level of maintenance and sustainability of the program is still low.

4.6. *Optimization of Infrastructure Maintenance by the Community*

The condition of the infrastructure that has been built by the community in the above programs is quite varied. In general, the pattern of infrastructure maintenance has in common. The series of operational and maintenance implementation that is applied as follows:

- Establishment of a group of beneficiaries and maintainers
Each program has its own rules in the formation of user and maintenance groups. The group formation was partly done during the planning and partly after the handover of assets to the village government. In general, the group organizational structure for the entire program is almost the same, namely the chairman, secretary, treasurer, and technical team. However, for programs funded by the state budget funds that have been handed over to Wali Village, the Village government does not form a group of users and maintainers. Maintenance is carried out directly under the village development section.
- Technical Training of Beneficiary and Maintenance Groups
The beneficiary group and maintainers receive technical training from facilitating facilitators as well as from related agencies/agencies.
- Preparation of Technical Documents for Utilization and Maintenance
This document contains data on the people who use infrastructure, technical data on infrastructure, procedures for managing infrastructure and sources of funds for maintenance.
- Implementation of Utilization and Maintenance Activities
The beneficiary and maintenance groups coordinate the implementation of infrastructure improvements, both in terms of funding, labor and implementation time. In addition, it is necessary to report the use of transparent and accountable funds from groups of users and maintainers to the community.

4.7 *The constraints faced in the Implementation of Infrastructure Maintenance*

In order to manage infrastructure maintenance, there are several obstacles encountered in the community including:

- The less level of public awareness in the infrastructure had built, especially in urban areas.
The globalization has led to change social worth in society. This also affects the maintenance of community facilities and infrastructure. In another side, society was busy with work, people do not have free time to contribute to their community. Meanwhile, in Sragen Regency in 2016, the district government received many reports of the amount of damage to community-based drinking water and sanitation facilities (Pamsimas) which were damaged due to lack of community awareness of the maintenance and utilization of clean water facilities.
- There is no salary for the Operation and Maintenance group and limited human resources in the community.
The beneficiary and maintenance group is a group of people who carry out social activities. They are volunteers who donate their time and energy sincerely without getting paid in kind. People who have free time are usually a group of women who have limited technical and administrative knowledge. Their empowerment takes a long time. Finding consistent cadres will determine the success of community infrastructure maintenance. For the pamsimas program, KPP receives funds regularly from clean water usage fees. However, for other infrastructure, it is quite difficult to ask for repair fees.
- Regulations on Administration are quite a lot
Regulations or administrative formats that must be prepared are quite a lot, especially in pamsimas programs. Administration in the form of financial bookkeeping, reporting activities and others will take time to complete.
- Mobilization or substitution of facilitators is quite high.
The companion consultant employment agreement system is a contract system, both work contracts with work units and work contracts with companies. This causes the turnover of Consultants / Facilitators to be quite high, not infrequently there are locations that have no

technical assistance for several months. The new facilitator will not understand the program which has hampered the transfer of technical knowledge to the community.

- Program assistance is not sustainable.

Based on the empowerment experience, to transfer knowledge to the community takes around 3 (three) years. However, in the PISEW and Sanitation programs, facilitator assistance from socialization to implementation is less than 1 (one) year. Assistance only until the completion of the physical work, so there is no monitoring for utilization and maintenance.

5. Conclusions

From the analysis above, conclusions can be drawn as follows:

1. The sequence of infrastructure utilization and maintenance activities as follows:
 - a. Establishment of a group of beneficiaries and maintainers
 - b. Technical Training of Utilization and Maintenance Groups
 - c. Preparation of Technical Documents for Utilization and Maintenance
 - d. Implementation of Utilization and Maintenance Activities
2. The success of infrastructure maintenance depends on the level of concern of the local community and the presence of volunteers of local communities. The results of the field visit showed that the infrastructure in rural areas was better maintained than urban areas.
3. The most maintained type of infrastructure is the pamsimas program, which is clean water infrastructure. This is because clean water is one of the basic human needs.
4. Some of the obstacles in maintaining infrastructure by the community are low levels of community awareness, no salary for Operation and Maintenance Groups, quite a lot of administrative rules, mobilization or substitution of facilitators, and unsustainable program assistance.

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