

Clean Development Mechanism Approach to Family Welfare Movement (PKK) for Supporting KOTAKU Program at Klitren Village, Yogyakarta

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ABSTRACT

KOTAKU, or City Without Slum areas, is a nationwide initiative carried out in a number of Indonesian provinces where it is believed that there are slum areas where residents live in substandard conditions. The goals of KOTAKU are for 100% of people to have access to drinking water, 0% to slum areas, and 100% access to good sanitation. Klitren village, one of the villages in Yogyakarta city, was identified as the project's target since it has decent access to sanitation, some slum areas, and limited access to drinking water. KOTAKU was supported by the ESD program, which educated and empowered women who are active agents of change in the Family Welfare Movement. (PKK). They provide a number of programs on Family Empowerment and a Clean and Healthy Lifestyle (PHBS). As a result, since they were conducted in the same target groups, ESD programs were supported and synergized with PKK initiatives. ESD activities, such as Training of Trainers, were offered to prominent/core members of the PKK at the village level. Afterward, they could serve as supervisors, mentors, and facilitators for women at all village levels. Some constraints remained in conducting a healthy and positive environment, such as lousy waste management, including a waste bank, the wrong mindset on garbage, inadequate knowledge of a healthy and clean environment in a highly populated area, no communal hygiene facility (septic tank), and the behavior to use the river as dumping ground. These issues were resolved by the community through extensive communication and collaborative approaches. Women had an important role since they held monthly gatherings for education and discussion. KOTAKU could be implemented in this village. However, certain adjustments are needed to meet program objectives. The walkways were repaired, and a paving block was installed in their place. Several houses were resettled three meters from the river, where they were also cleaned and reconstructed to increase the flow and prevent flooding when it rained.

Keywords: Clean, Healthy, KOTAKU, Women's Role

1 Introduction

Climate change due to the greenhouse effect and other environmentally damaging activities is driving a growing movement to adopt programs that can reduce the rate of greenhouse gas emissions and environmental destruction. At the global level, various agreements have been signed, starting from the Earth Summit in Rio de Janeiro in 1992, which resulted in the Kyoto Protocol. One of the essential points produced by the Kyoto Protocol is the Clean Development Mechanism [1]. The conference discussed plans after the Kyoto Protocol. Related to climate change and the efforts made by various countries and multinational organizations to overcome it, Indonesia is committed to contributing through various policies outlined in various development activities adapted to natural conditions according to its geographical location. One of the policies to encourage this commitment is the urban planning sector through the KOTAKU (*Kota Tanpa Kumuh* or City Without Slums) program.

The KOTAKU program is a strategic effort of the Directorate of Settlement Area Development, Directorate General of Human Settlements, to increase the community's role and strengthen the local



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government's role in accelerating slum upgrading and supporting the 100-0-100 movement in urban areas in 2016-2020 [2]. The program was launched in April 2016 using a synergy of collaboration platforms between stakeholders at the Central and District/City levels and making the Local Government the skipper in slum upgrading [3].

Twelve urban villages in Yogya City will be the pilot targets of the City Without Slums (KOTAKU) program. The 12 villages are Klitren, Baciro, Bumijo, Tegalrejo, Kricak, Brontokusuman, Sorosutan, Purbayan, Prawirodirjan, Ngupasan, Pakuncen and Pringgokusuman. This activity supported various slum upgrading programs planned by the region, which can be for physical projects, facilities, infrastructure, sanitation, and environmental management. The awareness of the environment is increasing, and many parties are concerned about the damage to nature because of people's behaviors that have disturbed the ecosystem's balance [4]. If this continues, it will reduce the quality of the environment and disrupt life as a whole.

Various parties, including the government, try to prevent an area from becoming a slum. It has received great support from the community. Many people were involved, not just passively complying and waiting for the government, but were also directly involved. This synergy is our main asset in alleviating slums in Yogyakarta. Individual activities have not produced anything very significant to reduce the rate of slum damage and environmental degradation. Therefore, a collaboration from universities, government, partners, and communities was needed to minimize the impact of environmental problems through the **clean development mechanism (CDM)** approach. As a result, it was necessary to encourage people to care more about the environment in line with their respective actions.

This program is designed to obtain preliminary information on community readiness, the ability of the Klitren Village PKK team agents, the synergy of Yogyakarta City government programs, and the dissemination of the learning outcomes of the Department of Agricultural Industrial Technology, Faculty of Agricultural Technology, Universitas Gadjah Mada in the Educational for Sustainable Development (ESD) program and the preparation of detailed engineering design by residents based on predetermined structuring indicators such as drainage, sanitation, environmental roads, drinking water, fire prevention, and public open space.

This activity was motivated by the need to increase the ability of the PKK Movement Agent and community awareness of the No Slum City program and improve environmental improvements caused by various social, economic, and cultural activities. The PKK Movement Agent, as the object of the activity, is directed and assisted to be more ready with the community to pay attention to environmentally friendly aspects in every process of its activities. In addition, the orientation of environmentally friendly community activities is expected to provide positive value for the surrounding environment and be disseminated to a broader audience.

2 Research Methodology

The program is intended to integrate the results of learning and research with capacity-building programs implemented by the government to the community through the synergy of community service. The series of activities were arranged to anticipate the lack of public understanding of the clean development mechanism, bridge the implementation of the Yogyakarta City government program with the community, and increase community involvement in the education program to preserve the environment sustainably. The program actively involves the PKK Movement Team, students of the Department of Agricultural Industrial Technology, students of the Agroindustry Vocational School, the UGM ESD Team, and the Yogyakarta City Government. It was expected to increase their practical understanding and skills in implementing the City Without Slums Programme.

2.1 Qualitative Approach

Qualitative research is intended to explore in depth various relevant information related to current conditions, the reasons or background of action, views or opinions, and expectations of PKK Movement Agent Klitren Village. The chosen approach is Focus Group Discussion (FGD), which involves several *Lurah*/Head of Village, the Head of PKK Movement Agent Klitren Village, and the UGM ESD Team and community representatives. The results of this FGD are expected to provide comprehensive information about the Clean Development Mechanism Approach to the "Kota Tanpa Kumuh" (KOTAKU) Programme of the Klitren Village PKK, Gondokusuman, Yogyakarta City, which will be followed up in quantitative research, especially in the development of questionnaires.

Training and mentoring for the PKK Movement Agent in Klitren Village are designed to be included in this ESD activity because it is closely related to advanced green activities at the family level. In addition, the members of the Movement Agent will work together in each working group to support family empowerment and realize family welfare as well.

2.2 Quantitative Approach

Quantitative research aims to get an overview of knowledge, abilities, and awareness in the Clean Development Mechanism approach towards the KOTAKU Programme of the PKK Movement Team in Klitren Village, Gondokusuman, Yogyakarta City. The data collection method used in this research is Purposive Sampling of PKK members of Klitren Village who have received education and are trying to apply education and CDM training results.

2.3 Data Collection

Data collection was conducted through direct face-to-face meetings and interviews with the help of a structured questionnaire designed specifically for this study. The interviewers in charge of the interviews were students participating in the Industrial Sanitation course and the Klitren Village PKK Team, who had been equipped with an assessment according to the CDM topic. Before the interviews, the interviewers were trained to recognize and strategize for field tasks. For each region, interviewers from the local area were assigned to be cost-efficient and effective in technical implementation.

The involvement of students in the implementation of research on clean development mechanisms begins with the organization of learning materials and RPKPS, student assessment, focus group discussions with the Movement Agent of PKK Klitren Village, and Village Local Government. This was done to formulate planning and organization, pre-assessment phase, assessment phase, analysis and feasibility study, to implementation and sustainability, is expected to provide 'know how' and 'show how' to them so that environmentally sustainable development education initiatives can be successful. In the assessment phase, waste samples were tested to determine the characteristics of pollutants and the amount produced by the community in the PKK Klitren Village activity area.

3 Results and Discussion

The carrying capacity of the area was taken into account when observing production areas in household industries to identify issues, potential applications, community group profiles, understanding, skills, and awareness of environmental management, the most straightforward and most difficult activities to do, and other things that have the potential to cause slums. Some things identified include the community's efforts to implement sanitation and 5R/5S by utilizing leftover materials and improvements to reduce the number of leftover materials from daily home activities. Some essential things that can be done in the future based on the results of observations and discussions carried out include the level of education, knowledge, skills, and experience to increase the contribution and involvement in implementing the KOTAKU program in

Klitren Village, Gondokusumen, Yogyakarta. Some activities, which were achieved during the program, are depicted in Table 1 as follows.

Table 1: *Activities during the Clean Development Mechanism at PKK Kelurahan Klitren – Yogyakarta*

No.	Activities	Places	Output
1.	Meeting with local government officers	Kelurahan Klitren	Permission and Explanation of Work Framework
2.	Data Gathering by conducting a survey	Klitren Area and Embung Langensari,	Observation, Discussion with the community, local government officers, or head of local areas
3.	Focus Group Discussion (FGD)	Kelurahan Klitren	Presentation of Survey results and Planning the activities with local chiefs
4.	Focus Group Discussion (FGD)	Common Building RW XVI Klitren	Presentation of Survey results and Planning the activities with the Family Welfare Movement (PKK)
5.	Workshop on 5R for household and food producers	Common Building RW XVI Klitren	Increasing understanding, dissemination, discussion, and feedback of 5R Implementation and good housekeeping to Movement Agent of PKK Klitren
6.	Workshop on sanitation and personal hygiene for household and food producers	Common Building RW XVI Klitren	Increasing understanding, dissemination, discussion, and feedback of sanitation and personal hygiene for household and food producers to Movement Agent of PKK Klitren.
7.	Study visits and gathering with established women's groups on recycled goods	Sukunan Village and Florist Garden, Sleman, Yogyakarta	Field lecturing, discussion, coaching clinics, capacity building, and member gatherings.

All activities above were designed to improve and strengthen the Movement Agent of PKK Klitren's ability and capability to empower the community through all social activities that activated families and households in Klitren. Based on a field visit, discussion with some community member (see figure 1 and 2), and the questionnaire that was fulfilled by around 80 households, the findings depicted as follow:

- Community awareness, mindset, and time for environment management were still low and needed standard agreement among stakeholders to solve these problems.
- No initial funding from the local government to manage all waste in the village since the funding mostly came from family contributions.
- Separating household wastes from the house was difficult due to the current mindset.
- Lack of area for composting household organic waste.
- Most village areas were very narrow, so replanting the trees or crops should be adequately planned.



Figure 1: Field visit to Klitren village by the students accompanied by the head of local government (Lurah) Klitren.

The students involved in this activity were the course participants in Industrial Sanitation and Life Cycle Assessment courses offered by the Department of Agroindustrial Technology – Faculty of Agricultural Technology – Universitas Gadjah Mada. They had an insight into environmental sanitation in city areas and how the society, local government, and other stakeholders worked to minimize the waste and achieve *Pola Hidup Bersih dan Sehat* (Clean and Healthy Life Style) in their houses and surrounding. During the program, the students learned more experiences from the community, how they lived and survived with their businesses, mainly as food street vendors, also how they managed the waste from their household and production.

Furthermore, these programs encouraged the synergies between campus, the community, and the government in pursuing achieving Education for Sustainable Development, and some results were as follows:

- Inserting more student activities in the curriculum, such as involving students in a community development program
- Improved food producers' well-being by assisting and nurturing them in preparing their good, healthy, affordable foods. Food and beverages are the intake of energy/calories and nutritional elements for humans and must be halal, clean, healthy, nutritious, and prepared with a happy heart.
- Enhancing the roles of PKK Klitren Village as an environmentally friendly agent to be disseminated to their respective families to support the KOTAKU program.
- Inspiring and empowering PKK Klitren Village as leaders of change
- Together with related agencies and institutions, fostering TP PKK through various KOTAKU programs and the spirit of anti-slum, quality of life improvement, and environmentally friendly.

4 Conclusions

The Education for Sustainable Development project, carried out in Klitren Village, City of Yogyakarta, and targeted to some households and food producers with micro-scale industry or household level, received support from the Clean Development Mechanism model in integrating teaching, research, and community service. It also supported community capacity building which was synergized with local government. In addition, the CDM implementation encouraged PKK Klitren Village to promote a healthy, clean environment and lifestyle.

5 Declarations

5.1 Study Limitations

The study was conducted in Klitren Village, Gondokusuman, City of Yogyakarta, and focused on Movement Agent of Family Welfare Movement (PKK) activities.

5.2 Acknowledgements

The Authors acknowledged all Movement Agents of the Family Welfare Movement (PKK) – Klitren Village members and the Head of the Local Government of Klitren Village.

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5.4 Publisher’s Note

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