

# Youth Community as Initiator, Motivator and Executor in the Climate Village Program Implementation in Malangan Sukoharjo Indonesia

ArgyoDemartoto

Department of Sociology, Faculty of Social and Political Sciences, Universitas SebelasMaret, 57126 Surakarta, Indonesia

**Abstract.** Climate change impacts ecosystem, public health, food security, and economic development. The community-based adaptation and mitigation capacities of climate change should be strengthened through implementing Climate Village Program. This research aims to explore youth community as initiator, motivator and executor of Climate Village Program in Malangan Sukoharjo. Data collection was conducted using observation, in-depth interview and documentation in September–November 2021, data analysis using an interactive model, and data validity test using data source triangulation. Fifteen informants of research were Chairperson of Environmental Office of Sukoharjo, staffs of Malangan Village, advisor, head, Living Environment Division of Climate Village Program and Malangan villagers particularly youth community of Malangan Village. Result indicates Malangan villagers developing potential medicinal plants, ornamental plants, and livestock enthusiastically. Youth community actively initiates and motivates people through socializing Covid-19 prevention and management, applying healthy and clean life behaviour, including processing and utilizing rubbish actively through Reuse Reduce Recycle system and reforestation, constructing recharge areas to prevent flood, and planting big trees to improve family food resilience, energy resilience, and people welfare and to reduce emission. Inadequate knowledge on fish cultivation and plastic bottle rubbish processing constrains the implementation as the execution of Climate Village program.

## 1 Introduction

Global living environmental problem reflects international community to industrialization, rapid population growth, expansive food deficiency, damaged non-renewable natural resource, and environmental pollution affecting the world due to development activity [1]. The environmental issues resulting from human activities also encourage the acceleration of climate change phenomenon on this earth. Human (anthropogenic) activities related to the increased green house emission are the main cause of climate change [2].

The temperature of earth (global) surface increases by around 1.35°C and expectedly will keep increasing by 1.5 - 2<sup>0</sup> C in the next 30 years. The increased temperature of earth will potentially result in the climate change-related disasters, higher incidence of typhoid fever, malaria, fever, Covid-19, and increased frequency of natural disaster/extreme weather (landslide, flood, drought, tropical storm; season shift and rain pattern change. In addition, it will result in lowered farming productivity, increased temperature leading to forest fire, endangered biodiversity and increased sea water surface potentially leading to permanent flood and infrastructure damage in coastal areas [3].

The great impact on human survival on the earth primarily triggers green constitution reformation in the governance process. Article 65 of Republic of Indonesia's Law Number 32 of 2009 about Living Environment Protection and Management explains that the state is responsible for living environment protection and management (human resource, natural resource, and cultural resource) [4]. Environmental protection and management is not only the government's responsibility but also the youth community's. The national-scale program based on community empowerment organized by the Republic of Indonesia's Ministry of Living Environment is, among others, Climate Village Program. It is the Climate Village program to encourage the active participation of public and all parties in implementing local action to improve the resistance to climate change effect. The climate village program is expected to reduce national emission annually, to maximize the utilization of waste as the source of energy and to improve the comprehension on climate change and the effect generated to encourage the community to contribute to strengthening public resistance to climate change [5,6].

Indonesia targets the establishment of 20,000 climate villages in 2024. It is accomplished by referring to the Minister of Living Environment and Forestry's Regulation Number 84 of 2016 stating that the Climate Village Program can be implemented at the lowest administrative region equivalent to village [7]. Malangan Village Bulu Sukoharjo Indonesia is one of villages to make the Climate Village Program its featured program. Departing from Malangan Village's geographical condition vulnerable to landslide and less productive soil construction, the Climate Village program is held as the village government's attempt to grow awareness of environment and plastic waste utilization and management among the community. This activity is conducted to encourage public participation of community and all parties in doing local action to improve the people's resilience and health degree and to reduce green house emission. This research aims to study the youth community as initiator, motivator, and executor of climate village program (Indonesia: *Program Kampung Iklim*, thereafter called Proklim) in Malangan Bulu Sukoharjo Indonesia.

## 2 Method

This research is an exploratory research and data was collected using observation, in-depth interview and documentation [8]. Data source used was primary data including the result of interview and observation on the 15 informants including, among others, Chairperson of Environment Service Office of Sukoharjo Regency, Staff of Malangan Village, Head of Malangan Village, Head of Neighbourhood Association, Secretary of Malangan Village, advisor, head of Proklim living environment division, citizen of Malangan Village, particularly youth community of Malangan Village and secondary data source including written archives in September-November 2021. This research employed snowball sampling as the sampling technique, to make the sample taken actually representative and to know surely the implementation of Proklim in Malangan initiated by, and the role and participation of youth community. Data validation was carried out using data triangulation. Data obtained was then analyzed using an interactive model of analysis [9].

### 3 Result and discussion

Youth community in MalanganSukoharjo serves as the facilitator of Malangan Village Proklim. Proklim is the campaign conducted by Malangan Village government in the attempt of saving the environment. It is intended to improve the participation of community and other stakeholders to strengthen adaptation capacity to the effect of climate change and reduced Green House effect. In addition, it is intended to recognize the attempts of adapting and of mitigating the climate change conducted and improve the welfare at local level according to the regional condition [10,11]. Youth community of Malangan Village, as initiator, motivator, and executor of climate village program, holds workshop continuously and sustainably to improve knowledge on climate village program, fish breeding mechanism and how to manage the used-bottle waste to be planting media.

#### 3.1 Youth as Initiator

Facing some environmental problems, Malangan villagers began to be aware of the importance of environmental condition around their houses, by embarking on constructing pots along the road and then planting flower plants on them. Environmental problem occurring is related to groundwater quality and rubbish pile seen in the edge of road. So many rubbish piles in the edge of road make the people initiate to establish rubbish bank [12]. The implementation of Proklim in Malangan Village refers to the Minister of Living Environment and Forestry's Regulation number 84 of 2016 about Climate Village Program. It contains basic components, proposal requirement, assessment and category of Proklim. This regulation also pertains to the problem that Proklim can be developed and implemented in the lowest administrative equivalent to Citizen Association (RW) or Hamlet and the highest one equivalent to Kelurahan or Village. The activity started with the socialization made by Environmental Service Office of Sukoharjo Regency about Proklim, how to register and to fill in administrative form in Excel format contained in National Registry System (Indonesian: *Sistem Registri Nasional*, thereafter called SRN) application, including how to fill in the administrative form in Quick, Appropriate, and Responsible Green House Emission Reduction Calculation System for Community (Indonesian: *Sistem Perhitungan Penurunan Emisi Gas Rumah Kaca Secara Cepat, Tepat, dan Responsible untuk Masyarakat*, thereafter called SPECTRUM) [13].

#### 3.2 Youth as Motivator

Malangan villagers enthusiastically develop potential medicinal plants, ornamental plants, and livestock. They attend communication, information, and education actively on Covid-19 prevention and handling and apply clean healthy living behaviour. The members of community process and utilize rubbish actively using 3R (Reuse Reduce Recycle) system and do reforestation, develop infiltration holes to prevent flood from occurring and plant big trees. These activities can improve family's food resilience, energy resilience, and community welfare, and the achievement of targeted emission reduction. Inadequate knowledge on the fish breeding and the used-plastic bottle waste processing is a constraint in the implementation of climate village program [14]. Adaptation program is conducted by preparing infiltration holes through planting fruit trees. Meanwhile, in relation to the climate change mitigation program, the rubbish management activities have been conducted through rubbish bank, sorting by cleaning service officer, and organic rubbish management. Other programs include solar panel installation and reforestation in the existing Green Open Space.

In the climate change adaptation program, Malangan villagers construct infiltration holes, repair drains, construct *embung* (water reservoir), plant vegetable plants on pots, and install vertical garden. The output obtained from the reforestation activity can be used for the

citizens' private need and can be processed into food creation. The climate change mitigation activity includes rubbish management and solar panel light installation. Rubbish management is conducted through rubbish sorting, rubbish bank, and biopore hole.

### 3.3 Youth as Executor

In the implementation of Proklim, the Environmental Service Office of Sukoharjo Regency and the Chairperson of Climate Village Program along with youth community grows awareness among the villagers of the existence of environment by entering the citizen agenda forum and explaining the effect of climate change, in which the Service Office specifically held a forum inviting the citizens. Only do certain citizens who active in RW leadership and environment management attend this forum. This activity is intended to give the people the knowledge on Climate Village and to invite them to embark on expressing their opinion about the problem in their village. The Living Environment Service Office holds a discussion with the members of community to map the prioritized environmental issue. Environmental problems occurring in Malangan Climate Village are flood and weather pollution due to big vehicle's smoke, drought during dry season, flood during rainy season, dirty environment or slum, and water puddle existing continuously. This puddle becomes mosquito's proliferating place and leads the people to be infected with DHF and Malaria diseases [15,16].

Having analyzed the problem existing in Malangan Climate Village, the activities of Proklim are then planned to solve the problems. Malangan Climate Village constructs more water channels, infiltration holes on certain points, and biopore hole in each of Malangan Villagers' house, and does reforestation.

In implementing their activities, Malangan Climate Villagers hold *kerjabakti* (community service) agenda, by planting tress along the road of Climate Village. The people initiate to connect electricity pump to pipe and faucet installed close to the trees to enable them to maintain the trees easily. They also construct infiltration hole, *embung*, and biopore hole, do reforestation, build garden in water puddle location and rubbish bank, distribute family medicinal plants to all Climate Villagers, construct infiltration hole (well) and vertical garden, provide rubbish bin for three different types of rubbish, composter, and solar panel to illuminate the road in Kandang Doro Climate Village [17]. Production and information publication activities are conducted by disseminating experiences obtained by the Head of Climate Village and youth community in implementing Climate Village.

### 3.4 The Sustainability of Climate Village Program

The activities of adapting to and mitigating climate change can run well and sustainably with the active participation of communities and the support of many parties. The indirect output of climate village implementation inhibits the adapting and mitigating attempts. Climate Village Program as an attempt of adapting to climate change at the bottom still finds such constraints as pros-cons within society. Many people attempt to adapt to and to mitigate climate change or other environmental activity reluctantly because the result cannot be felt directly. The activators of Malangan Climate Village program in Sukoharjo revealed that community paradigm is a factor making the establishment of Proklim in a number of regions not showing significant improvement. Even, people often comment negatively on the program, thereby lowering the spirit of Proklim activity administrator.

In addition to constraint, Climate Villagers benefit from the program socially, economically, and environmentally. Environmental benefit perceived is natural green environment with fresh and free-of-pollution weather in which the change to better life has occurred. Social benefit includes the closer relation between neighbours in the presence of activities in Proklim. Meanwhile, economical benefit includes saving in the expense for

kitchen needs due to the plants accessible to the community. Government should appreciate the members of community for having implemented the adaptation and mitigation activities in their own region. They are expected to be environmental ambassador that can make socialization, have responsible feeling and high concern with environment [18].

In adapting to and mitigating the effect of climate change, youth community can organize and provide facilitation and training, and community empowerment responsibly. In addition, they can realize the activities of utilizing, maintaining and preserving the village environment.

## 4 Conclusion

Youth Community in Malangan Sukoharjo actively initiates and motivates people in adapting to and mitigating the effect of climate change. As the executor, they can organize and provide facilitation and training, and community empowerment responsibly. In addition, they can realize the activities of utilizing, maintaining and preserving the village environment.

## References

1. D.H. Meadows, J. Randers, D.L. Meadows, *The Limits to Growth (1972)*. In *The Future of Nature*, 101-116 (Yale University Press, Santa Barbara, 2013).
2. S.M., Koger. *The psychology of environmental problems: Psychology for sustainability* (Psychology Press, New York, 2014).
3. S.L., Reinman, Intergovernmental panel on climate change (IPCC). *Reference reviews*. (2012).
4. *Undang-Undang Republik Indonesia Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup* (Republic of Indonesia's Law Number 32 of 2009 about Living Environment Protection and Management)
5. H. B., Dulal, S. Akbar, Greenhouse gas emission reduction options for cities: Finding the "Coincidence of Agendas" between local priorities and climate change mitigation objectives. *Habitat International*, **38**, 100-105(2013).
6. J., De Prins, Two urgent topics: Climate change and biodiversity loss. *Phegea*, **50** (1), 2-3 (2022).
7. *Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.84/MENLHK-SETJEN/KUM.1/11/2016 tentang Program Kampung Iklim* (Minister of Living Environment and Forestry's Regulation Number P.84/MENLHK-SETJEN/KUM.1/11/2016 about Climate Village Program)
8. J.W., Creswell, qualitative, quantitative and mixed methods approaches.(Thousand Oaks, California, 2014).
9. Miles, M. B., Huberman, A. M., Saldaña, J. *Qualitative data analysis: A methods sourcebook* (Sage Publications, Los Angeles, London, New Delhi, 2018).
10. D.W., Kweku, O., Bismark, A., Maxwell, K.A., Desmond, K.B., Danso, E.A., Oti-Mensah, B.B., Adormaa, Greenhouse effect: greenhouse gases and their impact on global warming. *Journal of Scientific Research and Reports*, **17**(6), 1-9(2018).
11. B.M. Smirnov, *Global Energetics of the Atmosphere: Earth-Atmosphere Equilibrium, Greenhouse Effect, and Climate Change*. (Springer Nature, Berlin, 2021).

12. F. Faridy, A. Rohendi, The Role of Parents in Engaging Early Childhood to Implement 3R (Reduce, Reuse, Recycle). *Proceedings of the International Conference on Engineering, Technology and Social Science (ICONETOS 2020)* **529**, 483-486 (2021).
13. M.M. Simarmata, E. Sudarmanto, I. Kato, L.E. Nainggolan, E. Purba, E. Sutrisno, A. Karim, *Ekonomi Sumber Daya Alam*. (Yayasan Kita Menulis, Medan, 2021).
14. P. Golfam, P.S. Ashofteh, H.A. Loáiciga, Modeling adaptation policies to increase the synergies of the water-climate-agriculture nexus under climate change. *Environmental Development*, **37**, 100612 (2021).
15. V. Ermert, A.H., Fink, H., Paeth, The potential effects of climate change on malaria transmission in Africa using bias-corrected regionalised climate projections and a simple malaria seasonality model. *Climatic Change*, **120**(4), 741-754(2013).
16. S. Naish, P. Dale, J.S. Mackenzie, J. McBride, K. Mengersen, S. Tong, Climate change and dengue: a critical and systematic review of quantitative modelling approaches. *BMC infectious diseases*, **14** (1), 1-14 (2014).
17. M. Hymel, L. Kreiser, J.E. Milne, H. Ashiabor, (Eds.). *Innovation Addressing Climate Change Challenges*, (Edward Elgar Publishing, Cheltenham, 2018).
18. A. Adesipo, O. Fadeyi, K. Kuca, O. Krejcar, P. Maresova, A. Selamat, M. Adenola, Smart and climate-smart agricultural trends as core aspects of smart village functions. *Sensors*, **20** (21), 5977 (2020).