

Planting Matoa Trees (*Pometia Pinnata*) as an Effort to Support Environmental Health and Community Welfare in Gowa Regency

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ABSTRACT Food Security

ABSTRACT The issues of climate change and environmental degradation have become global challenges that impact the quality of human life. At the local level, public awareness of environmental conservation still needs to be improved as part of a sustainable solution. One of the strategic efforts undertaken is the simultaneous planting of matoa trees (*Pometia pinnata*) by the Ministry of Religion of Gowa Regency in order to commemorate Earth Day 2025 by involving schools, religious institutions, places of worship and the community with a target of planting 2,500 trees. This study aims to describe the initial role of the matoa tree planting program (*Pometia pinnata*) as an effort to support food security, environmental health and community welfare in Gowa Regency. The methods used were field observation and documentation studies related to the implementation of the planting program as well as literature studies on the ecological and health benefits of the matoa tree. The results of the study show that this program has become a strategic initial step in building collective awareness about the importance of environmental preservation. In addition to contributing to increasing green space and reducing the impact of climate change, the matoa tree was chosen because of its potential economic value as a local food source rich in nutrients and antioxidants, contributing to improving community health. Although the direct impact on community welfare cannot yet be measured quantitatively, this program shows great potential in supporting the achievement of sustainable development goals (SDGs), especially in the aspects of environmental health and long-term welfare.

Keywords: Matoa Tree Planting, Food Security, Environmental Health, Welfare, SDGs

10 Introduction

Indonesia is one of the countries that is proactively committed to achieving the Sustainable Development Goals (SDGs) as part of the national and global development agenda until 2030 [1]. This commitment is realized through the integration of SDGs goals and targets into national development planning documents such as the National Medium-Term Development Plan (RPJMN) and the Government Work Plan (RKP), as well as regional development planning documents such as the RPJMD and RKPD, which are also supported by relevant budgeting [2].

The legal basis for implementing SDGs in Indonesia is strengthened by the issuance of Presidential Regulation Number 59 of 2017 concerning the Implementation of Achieving Sustainable Development Goals, which mandates the preparation of the National Action Plan (RAN) and Regional Action Plan (RAD) as guidelines for implementing SDGs at the national and regional levels [3]. Through this regulation, the government ensures a clear link between government and non-government programs with SDGs indicators, including baselines, targets, budget allocations, and those responsible for implementation [4].

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In its implementation, Indonesia has established various supporting institutions such as the SDGs Working Committee in parliament, the Inter-Parliamentary Coordination Body, and the SDGs National Secretariat at the Ministry of National Development Planning/Bappenas, and involved various stakeholders ranging from government, borrowers, the private sector, to civil society. This collaborative approach is also supported by strengthening the data and reporting system, where the Central Statistics Agency (BPS) maps SDGs indicators, identifies data sources, and publishes SDGs indicator achievements periodically [5]. However, Indonesia still faces challenges in achieving several SDGs targets, especially in the aspects of food security (Zero Hunger), good health (Good Health and Well-Being), and environmental conservation. Innovative efforts at the regional level are needed to accelerate the achievement of these targets [6]. One relevant initiative is the massive matoa tree (*Pometia pinnata*) planting program in Gowa Regency, South Sulawesi, which was initiated by the local Ministry of Religion.

Pometia pinnata is a typical Papuan plant that has spread to various regions of Indonesia, especially in Kalimantan [7]. *Pometia pinnata* is a type of long-lived plant that has great potential for carbon storage. In addition to being a forest plant, matoa has been widely planted by the community as a yard plant. Because in addition to its wood which can be used for carpentry, the fruit of this plant is also very popular with the community [8]. This matoa tree planting program not only supports reforestation and environmental preservation, but also contributes to food security and improved health through the utilization of nutrient-rich matoa fruit by the community, as well as strengthening the social and economic welfare of local communities [9]. Thus, the matoa tree planting integration program in Gowa Regency is an example of real implementation of SDGs that covers environmental, health, and community welfare aspects in a holistic and sustainable manner.

11 Research Methods

This study uses a qualitative descriptive approach to understand the implementation of the matoa tree planting program (*Pometia pinnata*) in Gowa Regency and to examine the ecological and health benefits of the tree. Data collection methods include field observations, interviews, and documentation studies, where observations were carried out participatory during planting on April 22, 2025 to observe the process, involvement of related parties, and environmental conditions. Semi-structured interviews were conducted with stakeholders such as officials of the Ministry of Religion, principals, teachers, students, and Adiwiyata madrasah cadres to explore information about the perceptions and benefits of matoa tree planting related to food security and public health. In addition, the documentation study collected secondary data in the form of reports, circulars, and scientific literature regarding the morphological characteristics and ecological role of matoa trees in maintaining environmental quality. The data obtained were analyzed descriptively qualitatively with triangulation techniques to ensure the validity of the information, focusing on the ecological, social, and health aspects related to the implementation of the matoa tree planting program and its impact on the community in Gowa Regency.

12 Result and Discussion

The implementation of the matoa tree planting program (*Pometia pinnata*) in Gowa Regency on April 22, 2025 successfully involved various elements of society, ranging from schools, religious institutions, to the general public. In terms of quantity, as many as 2,500 matoa trees have been planted in various strategic locations, such as school environments, religious affairs offices (KUA), and places of worship. Field observations show that the active participation of

school residents and religious institutions is very high, driven by awareness of the importance of reforestation and the benefits of matoa trees for the environment and public health.



Figure 1: Planting of matoa trees by the Gowa Ministry of Religion



Figure 2: Planting of matoa trees at the place of worship



Figure 3: Planting matoa trees at MIM Bontolangkasa, Gowa



Figure 4: Planting matoa trees at MTsM Kaluarrang, Gowa

Based on the results of interviews with stakeholders, it is known that this program is seen as an innovative step to support local food security and public health. Matoa fruit is known as an alternative food source rich in antioxidants, vitamins, and other bioactive compounds that play a role in increasing body resistance, reducing the risk of degenerative diseases, and has the potential as a functional food ingredient. Matoa (*Pometia pinnata*) has been used as a medicinal plant for various diseases such as hypertension, diarrhea, dysentery, obstetrics and gynecological complaints [10]. Scientific studies have also shown that matoa leaf and fruit extracts have significant antioxidant and antibacterial activities, thus contributing to disease prevention efforts and improving public health [11]. In addition, other studies have revealed that matoa fruit skin contains phenolic compounds that have the potential to provide anti-obesity effects and support metabolic health [12].

Matoa fruit has a distinctive taste and aroma that resembles a combination of rambutan, longan and durian, so it is very popular and has a fairly high selling value, especially the large, sweet and thick-fleshed matoa type. However, matoa fruit traded in local markets is still very limited because it has not been cultivated intensively [13]. Matoa fruit also contains vitamins C and E which are useful for increasing endurance, relieving stress, and maintaining healthy skin. This uniqueness can be an added value for the agro-industry, namely by preserving agricultural products into processed products that are more durable and ready to consume [14]. In addition, matoa wood can be used as a lightweight construction material (Elidar and Purwati, 2022). Matoa bark and leaves also have potential as traditional tools that add to the social and economic value of this plant [15].

From an ecological aspect, planting matoa trees makes an important contribution to improving environmental quality. Studies in tropical forest areas show that *Pometia pinnata* plays a role in shaping dynamic tree communities, especially after ecological disturbances such as logging. Young *Pometia* individuals tend to grow more after disturbance, playing a role in ecosystem recovery and increasing biodiversity [16]. In addition, the carbon content in matoa tree litter also contributes positively to the carbon cycle and soil recovery after environmental disturbances. Manalu, Gusmardi and Zulmardi in their research said that litter has the highest carbon reserves because litter provides organic fertilizer to increase fertility in plants and crops in the field. This is in line with the findings of field observations in Gowa, where newly planted matoa trees showed good adaptation and began to form new vegetation communities in the school environment and religious institutions [17].

The matoa tree planting program also has positive socio-economic impacts. Interviews with residents and teachers showed that there is hope that the future harvest of matoa fruit can be used as an additional food source and a potential food product with economic value. In addition, this activity increases environmental awareness and cross-sector collaboration, strengthens the values of mutual cooperation and concern for environmental sustainability.

Overall, the results of this study indicate that planting matoa trees in Gowa Regency not only provides ecological and health benefits, but also strengthens food security and community welfare in a sustainable manner. This makes this program a model for implementing SDGs goals at the local level that is effective and can be replicated in other areas.

13 Conclusion

Planting matoa trees (*Pometia pinnata*) in Gowa Regency is an effective initiative strategy in supporting the achievement of the Sustainable Development Goals (SDGs), especially in the aspects of Zero Hunger, Good Health, and Well-Being. This program has successfully involved various elements of society, such as schools, religious institutions, and residents, with a total planting of 2,500 trees. Automatically, matoa trees play an important role in improving environmental quality, increasing biodiversity, and helping mitigate climate change through carbon storage and land rehabilitation. From a health and food security perspective, matoa fruit, which is rich in nutrients and antioxidants, makes a significant contribution to improving public health and providing a sustainable local food source. In addition, this program also encourages improving social and economic welfare through the potential utilization of harvest results and strengthening environmental awareness. Thus, planting matoa trees in Gowa Regency can be used as a model for the integration of environmental conservation and improving the quality of life of the community that is sustainable and worthy of being replicated in other areas as part of the implementation of SDGs.

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CITATION:

Nurul Musfira Faisal¹, Atok Miftachul Hudha², Husamah³2 (2025). Planting Matoa Trees (*Pemotia Pinnata*) as an Effort to Support Environmental Health and Community Welfare in Gowa Regency. *OASE*, 7(4), 854–859.