# IMPLEMENTATION OF ADIWIYATA MANDIRI PROGRAM AT SMAN 1 SUKAKARYA

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**Abstract.** *This article examines the implementation of the Adiwiyata Mandiri program at SMAN 1 Sukakarya, analyzing its environmental education initiatives, sustainable practices, and impact on the school community. The Adiwiyata program, launched by Indonesia's Ministry of Environment and Forestry, aims to create environmentally conscious educational institutions. This case study highlights how SMAN 1 Sukakarya successfully implemented the program's four pillars: environmentally friendly policies, environment-based curriculum, participatory environmental activities, and management of environmentally friendly facilities. The findings reveal that through systematic planning, strong leadership, community involvement, and innovative teaching methods, the school has transformed into a model for environmental education while facing challenges such as limited resources and changing mindsets. The school's journey toward achieving Adiwiyata Mandiri status demonstrates the potential for educational institutions to become catalysts for environmental awareness and sustainable development in their communities.*

**Keywords**: *Adiwiyata Mandiri, Analyzing, Education, Implementation.*

## 1. INTRODUCTION

Environmental education has become increasingly important in Indonesia's educational framework as the nation confronts various ecological challenges, including deforestation, pollution, and climate change impacts. The Adiwiyata program, launched collaboratively by the Ministry of Environment and the Ministry of Education in 2006, represents a significant national initiative to cultivate environmental awareness through school-based activities and policies (Maryani, 2016). The program's name derives from Sanskrit, where "Adi" means great, noble, or ideal, and "Wiyata" refers to a place where knowledge and ethics are obtained; thus, Adiwiyata signifies an ideal place for acquiring knowledge and values about environmental stewardship (Ministry of Environment, 2012). SMAN 1 Sukakarya, a public senior high school in the region, embarked on its Adiwiyata journey in 2015, progressively advancing through the program's levels-School Level, District Level, Provincial Level, National Level-to ultimately achieve Adiwiyata Mandiri status in 2023. This highest recognition indicates not only the school's excellence in environmental management but also its capacity to mentor other educational institutions in implementing similar initiatives (Desfandi et al., 2017).

Environmental problems are an increasingly worrying global issue. Global warming, water pollution, air pollution, and the accumulation of plastic waste have become serious threats to the sustainability of life on earth (Mulyana, 2019). To overcome these problems, environmental education is one of the effective strategies to build community awareness and ability to manage the environment (Sudarwati, 2018). In Indonesia, the Ministry of Environment and Forestry (MoEF) together with the Ministry of Education and Culture have launched the Adiwiyata Program as one of the efforts to encourage the creation of knowledge and awareness among school residents in efforts to preserve the environment (MoEF, 2019).

The Adiwiyata Program is an Adiwiyata Program launched on February 21, 2006 as a follow-up to an agreement between the Ministry of Environment and the Ministry of

National Education (now the Ministry of Education and Culture). This program is designed to encourage and form schools in Indonesia that care about and have an environmental culture. This program aims to encourage the creation of knowledge and awareness of school residents in an effort to preserve the environment. SMAN 1 Sukakarya is one of the schools that has succeeded in achieving the title of Adiwiyata Mandiri, the highest level in the Adiwiyata Program. This study aims to analyze the implementation of the Adiwiyata Mandiri Program at SMAN 1 Sukakarya as a learning material and reference for other schools that want to develop similar programs. At the beginning of its implementation, the number of schools participating in the Adiwiyata program was still very limited. According to data from the Ministry of Environment (MINISTRY OF ENVIRONMENT, 2010) in 2006-2009 there were fewer than 200 participating schools. Then in 2010, this program expanded so that the number of participating schools increased to 1351 schools out of 251,415 schools (elementary, junior high, high school, vocational school) throughout Indonesia.

This article analyzes how SMAN 1 Sukakarya has implemented the four fundamental components of the Adiwiyata program: environmentally friendly policies, environment-based curriculum implementation, participatory environment-based activities, and management of environmentally friendly supporting facilities.

## 2. LITERATURE REVIEW

### 2.1 Origins and Evolution

The Adiwiyata program was established in 2006 through collaboration between Indonesia's Ministry of Environment and the Ministry of Education and Culture (Ministry of Environment and Forestry, 2016). Maryani (2014) traces the program's development, noting that its name derives from Sanskrit terms reflecting ideals of knowledge acquisition in a context of social and environmental harmony. The program was designed as a response to increasing environmental degradation in Indonesia, with schools identified as strategic venues for cultivating environmental awareness and action. Krisnawati et al. (2015) document the program's evolution through various stages of implementation and recognition levels—from school level to district/city level (Kabupaten/Kota), provincial level, national level, and finally to the Mandiri (independent) status. They explain that Adiwiyata Mandiri status is awarded only to schools that have maintained National level status for three consecutive years and successfully mentored at least ten other schools to achieve Adiwiyata status.

### 2.2 Theoretical Underpinnings

Several researchers have explored the theoretical foundations of the Adiwiyata program. Desfandi et al. (2017) frame the program within the concept of ecoliteracy, arguing that Adiwiyata aims to develop environmentally literate citizens who possess the knowledge, attitudes, and skills necessary for sustainable living. They contend that the program draws on constructivist learning theories that emphasize experiential learning and community engagement. Mulyana (2018) positions the Adiwiyata program within the broader discourse of environmental education, noting its alignment with international frameworks such as the UNESCO Tbilisi Declaration on Environmental Education and Education for Sustainable Development. The author highlights how the program integrates environmental, social, and economic dimensions of sustainability, reflecting a holistic approach to environmental education.

### 2.3 The Four Pillars Framework

The literature consistently identifies four fundamental pillars of the Adiwiyata program that guide its implementation. Handayani (2018) provides a detailed analysis of these pillars, environmentally friendly policy development, This entails establishing comprehensive policies that prioritize environmental protection and management at the school level. Implementation of environment-based curriculum: This involves integrating

environmental education across subjects and teaching methodologies. Participatory environmental activities: This encompasses active involvement of all school stakeholders in environmental initiatives both within and beyond school boundaries. Management of environmentally friendly facilities: This focuses on developing and maintaining infrastructure that supports sustainable resource use and environmental conservation. This four-pillar framework provides schools with a structured approach to implementing environmental education while allowing flexibility to adapt to local contexts and needs.

## 2.4 Policy Development and Leadership

Research highlights the critical role of policy development and leadership in successful Adiwiyata implementation. Listyarini et al. (2021) conducted a study using an institutional approach to analyze Adiwiyata schools, finding that effective environmental policies require strong leadership, clear vision, and alignment with broader institutional goals. Their research indicates that schools that formalize environmental commitments through explicit policy documents and allocate adequate resources demonstrate more sustainable program implementation.

Similarly, Handayani (2018) emphasizes the importance of integrating environmental considerations into school strategic planning, budgeting processes, and operational procedures. The author notes that successful Adiwiyata schools typically allocate 15-20% of their operational budget to environmental initiatives, reflecting institutional commitment to environmental values.

## 2.5 Curriculum Integration

The literature reveals diverse approaches to integrating environmental education into school curricula. Rachman and Maryani (2017) examine teachers' pedagogical competence in implementing environmental education, finding that both monolithic (separate subject) and integrated (across subjects) approaches are employed in Adiwiyata schools. Their research shows that while integrated approaches are more common, a combination of both approaches often yields optimal results.

Desfandi et al. (2017) highlight the importance of locally relevant environmental content in curricula, arguing that connecting environmental learning to students' immediate contexts enhances engagement and understanding. Their study of several Adiwiyata schools demonstrates that project-based learning focused on local environmental issues is particularly effective in developing students' environmental literacy.

## 2.6 Participatory Approaches

Research consistently emphasizes the value of participatory approaches in Adiwiyata implementation. Pradini et al. (2018) examine stakeholder involvement in Adiwiyata schools, finding that programs that actively engage students, teachers, staff, parents, and community members demonstrate greater sustainability and impact. Their study identifies various participation mechanisms, including environmental committees, student organizations, community service projects, and partnerships with external stakeholders.

Mulyana (2018) further explores how participatory approaches contribute to the development of an environmental culture in schools. The author's ethnographic study of Adiwiyata schools reveals that participation in environmental decision-making and activities fosters a sense of ownership and collective responsibility, gradually transforming school norms, values, and practices.

## 2.7 Environmental Facilities Development

The literature addresses various approaches to developing environmentally friendly facilities in schools. Azmi and Elfyetti (2017) document infrastructure developments in Adiwiyata schools, including waste management systems, energy and water

conservation technologies, green open spaces, and biodiversity zones. They note significant variation in facility development based on school resources and contexts, with some schools adopting high-tech solutions while others implement low-cost, locally appropriate alternatives.

Sumarmi (2019) provides case studies of environmental management strategies in senior high schools, highlighting innovative approaches such as rainwater harvesting, composting systems, waste banks, and school gardens. The author notes that these facilities serve dual purposes—reducing schools' environmental footprints while functioning as practical learning resources for students.

## 3. RESEARCH METHODS

This study employed a qualitative approach, utilizing document analysis of school policies, curriculum materials, annual reports, and achievement records related to the Adiwiyata program at SMAN 1 Sukakarya. Additionally, observations of school facilities and environmental activities were conducted to verify documented claims. Interviews with key stakeholders, including school administrators, teachers, students, and community partners, provided deeper insights into implementation processes, challenges, and impacts. Data analysis followed thematic coding procedures aligned with the four components of the Adiwiyata program to identify patterns, success factors, and areas for improvement in the school's implementation approach.

## 4. RESULTS AND DISCUSSION

### 4.1 Environmentally Friendly Policies

SMAN 1 Sukakarya has developed comprehensive environmental policies that permeate all aspects of school operations. The school's vision and mission statements explicitly incorporate environmental preservation and sustainable development as core values. This commitment is further operationalized through:

- Allocation of 20% of the school's annual budget specifically for environmental management and education activities
- Formation of an Environmental Management Team comprising administrators, teachers, students, and community representatives
- Development of standard operating procedures for waste management, energy conservation, and green space maintenance
- Integration of environmental performance indicators into teacher and staff evaluation criteria
- Establishment of partnerships with local environmental agencies, NGOs, and businesses to support program implementation

These policy measures align with Nurjannah's (2018) assertion that strong institutional commitment manifested through clear policies and resource allocation is essential for successful Adiwiyata implementation.

### 4.2 Environment-Based Curriculum Implementation

The school has successfully integrated environmental education across subject areas rather than treating it as a separate subject. Key curriculum implementations include:

a. Development of learning modules that connect standard subject matter with environmental contexts and issues
b. Incorporation of local environmental concerns, such as water conservation and waste management, into teaching materials
c. Implementation of project-based learning approaches that engage students in solving real environmental problems
d. Regular environmental field studies and research activities
e. Assessment methods that evaluate students' environmental knowledge, attitudes, and action competence

A notable innovation is the school's "Green Science" program, which encourages

students to develop scientific research projects addressing local environmental challenges. Several student projects have received recognition in regional and national competitions, including a water filtration system using local natural materials and a biodegradable plastic alternative made from cassava waste. This approach reflects Hidayati et al.'s (2019) findings that effective environmental education requires experiential learning and real-world application rather than merely theoretical knowledge.

## 4.3 Participatory Environment-Based Activities

Student and community engagement forms a crucial element of the school's Adiwiyata implementation. Participatory activities include:

a. Student-led "Green Teams" responsible for specific environmental initiatives such as the school garden, waste bank, and energy conservation
b. Regular environmental campaigns and awareness events open to the broader community
c. "Eco-Preneur" program that helps students develop environmentally friendly business initiatives
d. Community service projects focused on environmental restoration and conservation
e. Annual "Green Festival" showcasing environmental innovations and traditional ecological knowledge.

These activities demonstrate how the school has moved beyond awareness-raising to foster action competence among students and community members, consistent with Meilinda et al.'s (2017) argument that participatory approaches are essential for translating environmental knowledge into behavioral change.

## 4.4 Management of Environmentally Friendly Supporting Facilities

SMAN 1 Sukakarya has transformed its physical environment to serve as both a learning resource and a model of sustainable practices. Key facility developments include:

a. Comprehensive waste management system incorporating segregation, composting, recycling, and upcycling
b. Rainwater harvesting system supplying water for gardens and cleaning purposes
c. School gardens featuring local biodiversity, medicinal plants, and organic vegetables
d. Renewable energy demonstrations including small-scale solar panels
e. Green open spaces comprising 40% of the total school area
f. Energy-efficient building modifications and water conservation fixtures.

The school's waste bank has been particularly successful, processing approximately 500 kg of recyclable waste monthly and generating income that supports other environmental initiatives. This exemplifies how environmental facilities can serve multiple functions: educational, ecological, and economic.

## 4.5 Success Factors and Challanges

Several factors have contributed to SMAN 1 Sukakarya's successful attainment of Adiwiyata Mandiri status:

a. Strong leadership from the principal and senior administrators who consistently prioritize environmental initiatives
b. Whole-school approach engaging all stakeholders in program planning and implementation
c. Strategic partnerships with government agencies, private companies, and environmental organizations
d. Incremental implementation that allowed for learning and adaptation over time
e. Documentation and evaluation systems that track progress and identify improvement

areas.

## CONCLUSION

SMAN 1 Sukakarya's implementation of the Adiwiyata Mandiri program demonstrates how environmental education can be effectively integrated into school systems through comprehensive policies, curriculum innovation, participatory activities, and facility development. The school's experience highlights the importance of a systematic approach that addresses all program components while adapting to local contexts and needs.

The success factors identified-strong leadership, whole-school engagement,strategic partnerships, incremental implementation, and systematic evaluation—provide valuable insights for other educational institutions seeking to enhance their environmental education efforts. Simultaneously, the challenges encountered and overcome offer important lessons about the persistence and adaptability required for sustained progress.

As climate change and environmental degradation increasingly threaten Indonesia's sustainable development, the role of educational institutions in fostering environmental literacy and action competence becomes ever more critical. SMAN 1 Sukakarya's achievement of Adiwiyata Mandiri status represents not an endpoint but a platform from which to continue advancing environmental education and sustainable practices within and beyond the school community.

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