

# INTRODUCTION TO THE CONCEPT OF GREEN ECONOMY EDUCATION THROUGH THE USE OF PURUN PLANTS AS AN EDUCATIONAL MEDIUM AT SMK NEGERI 4 PALANGKA RAYA

Eriawaty<sup>1</sup>  
Dewi Rakhmawati<sup>2</sup>  
Eli Karliani<sup>3</sup>  
Ali Sunarno<sup>4</sup>  
Rifan Andika Manalu<sup>5</sup>  
William Joshua Sinaga<sup>6</sup>

<sup>1,2,5</sup> Economic Education Study Program, Faculty of Teacher Training and Education, Palangka Raya University,  
<sup>3,4,6</sup> Pancasila and Civic Education Study Program, Faculty of Teacher Training and Education,  
Palangka Raya University,

\*Corresponding author. Email: [dewi.rakhmawati@fkip.upr.ac.id](mailto:dewi.rakhmawati@fkip.upr.ac.id)


**Abstract:** *Global environmental crises, such as climate change, depletion of natural resources, and increasing volumes of waste, further emphasise the importance of applying green economy principles in sustainable development. Education plays a strategic role in instilling sustainability values from school age, especially for vocational high school (SMK) students who will enter the workforce or become entrepreneurs. This community service activity aims to increase understanding and literacy of sustainable economics among students of SMK Negeri 4 Palangka Raya through interactive training based on the concept of green economy. The series of activities included material delivery, case study simulations, group discussions, practice in making environmentally friendly products, and evaluation of learning outcomes through post-tests. The implementation of this activity involved IKM Jawet Pahari Hapakat as a resource person and was attended by 28 participants from SMK Negeri 4 Palangka Raya.*

**Keywords:** *green economy, sustainable entrepreneurship, environmental education, SMK*

## Introduction

Global environmental issues such as climate change, pollution, and excessive exploitation of natural resources are now a major concern worldwide. This situation has led to the emergence of a more sustainable development approach, namely the green economy — an economic model that emphasises resource efficiency, low carbon emissions, and social welfare. This approach not only focuses on economic growth, but also on efforts to maintain environmental balance and improve the quality of life of the community.

In line with the development of the green economy concept, public awareness of the importance of implementing a sustainable lifestyle has also increased. This lifestyle includes various environmentally friendly actions, such as the use of renewable energy, reduction of plastic waste, consumption of local and organic products, and the use of greener transportation. According to a



report by the UN Environment Programme (UNEP, 2022), changes in people's lifestyles have the potential to reduce global carbon emissions by 40-70% by 2050, if done collectively and started early.

In Indonesia, the implementation of a sustainable lifestyle still faces major challenges. Data from the Central Statistics Agency (BPS, 2023) shows that Indonesia produces more than 18 million tonnes of plastic waste per year, with a recycling rate of only around 9%. This fact emphasises the importance of changing people's consumption behaviour. One strategic step to bring about this change is to raise environmental awareness from a young age, especially among students who will be the drivers of development in the future.

According to a UNESCO report (2021), environmental education from an early age plays an important role in shaping a person's sustainable behaviour. This education not only increases knowledge but also instils values, attitudes, and actions that support environmental sustainability. This is in line with a World Wide Fund for Nature (WWF) survey which shows that 82% of young people in Southeast Asia are interested in contributing to environmental conservation if they receive adequate education and support.

Therefore, instilling green economy values and a sustainable lifestyle from an early age is an important step in shaping a generation that cares about the environment and is creative and resilient in facing the global ecological crisis. This effort is expected to push Indonesia towards a cleaner, fairer, and more sustainable future.

Rapid economic growth is often not balanced with adequate environmental conservation efforts, giving rise to various ecological problems such as pollution, climate change, and natural destruction. In response to these challenges, the concept of a green economy has emerged as a development solution that balances economic, social, and environmental aspects through resource efficiency, renewable energy utilisation, and carbon emission reduction.

It is important to introduce this concept to vocational high school (SMK) students as future workers and entrepreneurs. Through green economy education, students can understand the importance of environmentally friendly innovation and acquire skills in creating products and solutions that support sustainability.

The Community Service (PkM) activity entitled 'Green Economy Education: Improving Sustainable Economic Literacy among Students at SMK Negeri 4 Palangka Raya' aims to strengthen students' understanding of the concept of green economy while raising awareness of the importance of sustainability principles in school entrepreneurship activities. It is hoped that through this activity, effective strategies can be formulated to improve sustainable economic literacy among students, so that they grow into a young generation that is intelligent, wise, and concerned about environmental sustainability.

## Method

The training activity was held on Friday, 28 July 2025, from 08:00 to 11:00 at SMK Negeri 4 Palangka Raya, located on Jalan Temanggung Kanyapi, with participants from grades X-XII. Students who are equipped with knowledge about the green economy from an early age will be more sensitive to environmental issues, such as waste management and the importance of using local resources wisely. The OECD (2020) emphasises that sustainable education in schools is key to shaping new mindsets that support environmentally friendly development. In addition, according to UNESCO (2021), environmental education and green economics can foster skills such as critical thinking, collaboration, and innovation. The training method used consisted of four stages. The first stage was the presentation of material covering an introduction to the concepts of green economics and sustainable business. The second stage is the introduction of environmentally friendly products or services. The third stage is a practical session on making products from purun. The fourth stage is a post-test to measure students' understanding.

## Result and Discussion

The training activity was held on 28 July 2025 in the hall of SMK Negeri 4 Palangka Raya and was attended by 30 students and entrepreneurship teachers. The training method in this activity was structured through four main stages that were integrated between theory, practical introduction, direct experience with practitioners, and evaluation.

The first stage involved a presentation of the material delivered by Rahman, M.Pd., a lecturer in Economics Education at the Faculty of Teacher Training and Education, University of Palangka Raya. The material focused on the concepts of green economy and sustainable business, emphasising the importance of efficient resource management, purun plants, the relationship between purun products and sustainable economy, and local products. This introduction served as an important foundation for students to understand the relevance of green economy in the context of sustainable development.



**Figure 1 Community Service Team and training participants**

In the second stage, participants are introduced to various environmentally friendly products and services. This stage serves as a bridge to link theory with practice and to foster students' awareness that sustainable business opportunities can provide economic benefits while preserving the environment (Handayani & Fitriana, 2022). Education about green products has been proven to play an important role in shaping the mindset of the younger generation to be more concerned about environmental issues (Hardianti et al., 2023).

The third stage is the practice of making products from purun, guided by Mrs Jaliah, owner of IKM Jawet Pahari Hapakat. Purun is a swamp plant native to Kalimantan that has both ecological and economic value. Various studies show that purun can be used as a raw material for weaving, biodegradable straws, and other environmentally friendly products that can reduce dependence on single-use plastics (Rahmah et al., 2022; Nurhayati et al., 2023). Furthermore, purun processing can increase local community income and strengthen the potential for green economy based on local wisdom (Mansyah et al., 2021). At this stage, a number of students were divided into several groups to practise weaving purun. There were 6 groups, each consisting of 5 students to complete the purun weaving. The materials and steps for making simple purun weaving are as follows:

Materials:

- Dried purun leaves
- Scissors or small knife
- Select purun leaves that are flat and not broken.
- Cut to size (0.5–1 cm wide, 30–40 cm long).

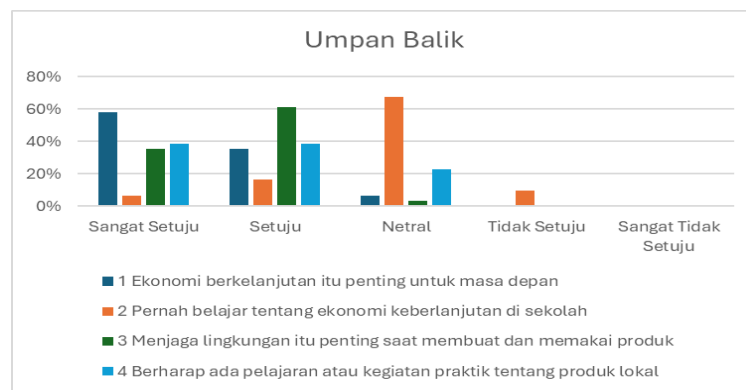
### Making the Basic Weaving Pattern

1. Take 6–8 strands of purun, place them horizontally in parallel.
2. Take another strand, weave it vertically in an up-and-down pattern.
3. Continue until you form a flat square or rectangular weave.
4. Once the basic pattern is complete, tighten the strands of purun so that they are not loose.
5. Press with your hands or temporarily secure with clips.
6. Trim the ends of the purun with scissors.
7. Fold the ends inward or tuck them in for a neater finish.



**Figure 2: The weaving process and woven results**

The fourth stage is the post-test, which is used to measure students' level of understanding after participating in a series of training sessions. This evaluation is important to assess the effectiveness of knowledge transfer and to provide a basis for the development of training methods in the future (Sugiyono, 2019).



**Figure 3 post-test results diagram**

The feedback results shown in the diagram indicate that the majority of respondents strongly agree ( $\pm 60\%$ ) that a sustainable economy is important for the future. This view is in line with the classic definition of sustainable development from the Brundtland Report, which emphasises that development must 'meet the needs of the present generation without compromising the ability of future generations to meet their needs'. Thus, students' awareness of the importance of sustainability can be seen as an initial foundation for shaping behaviour consistent with the principles of the Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education) and Goal 12 (Responsible Consumption and Production).

However, when asked about their learning experiences regarding sustainable economics at school, respondents tended to be neutral ( $\pm 70\%$ ). This reflects that formal knowledge about sustainability is not widely taught in school curricula. This condition is in line with the findings of UNESCO (2020), which states that education for sustainable development (ESD) still faces major



challenges in terms of integration into the formal education system, even though ESD is key to preparing the younger generation to face global issues (UNESCO, 2020).

On the other hand, 60% of respondents agreed that protecting the environment is important in manufacturing and using products. This finding supports the results of Zhou et al.'s (2023) research, which shows a positive relationship between education level and pro-environmental behaviour, such as energy conservation, use of environmentally friendly products, and participation in recycling activities. This means that despite limited formal knowledge, students already demonstrate positive attitudes towards environmentally friendly practices.

Furthermore, the most interesting aspect is the high expectations of students for practice-based learning of local products. About 40% of respondents 'strongly agree' and another 40% 'agree' that such practical activities need to be included in education. This enthusiasm supports the findings of Özkan & Gök (2025), who discovered that STEM and entrepreneurship-based learning with real-world practices can improve students' attitudes towards sustainable development while fostering innovation skills. This is also in line with the concept of contextual education, which emphasises the importance of linking teaching materials to students' real lives.

## Conclusion

Awareness of the importance of sustainable economics is high, in line with the principles of the Brundtland Report and relevant to the achievement of the SDGs. Curriculum integration is still weak, as seen from the dominance of neutral responses regarding experiences of learning about sustainability at school. Pro-environmental attitudes are beginning to form, although they still need to be reinforced with structured learning. There is great enthusiasm for practices based on local products, which could be a strategic entry point for implementing ESD in schools.

Overall, training methods based on theory, practice, the involvement of local practitioners, and evaluation have proven to be relevant for instilling understanding and skills in students in developing green economy concepts based on local potential.

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