



The Development of Monograph: Lahan dan Petani as Learning Materials of Agricultural Geography

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Abstract: Improving the quality of learning in the current 4.0 education era can be done through learning materials, one of which is monographs. According to their learning achievements, monographs can increase students' insights based on relevant literature studies and the latest research results following scientific developments. This monograph can support agriculture in Indonesia in the Agricultural Geography. It helps students in applicative ways to understand material related to the use of dryland, especially for students who live where the use of agricultural land is in the form of wetlands or swamps. This study aimed to develop a monograph of *Lahan dan Petani* as a learning material for agricultural geography using the Sadiman model. In this study, validation tests were carried out by material and media experts who are competent in their fields. The developed monograph was declared feasible as a reference book to support the Agricultural Geography course. It can contribute to education, especially in increasing students' knowledge contextually about dryland agriculture.

INTRODUCTION

Education is one way to improve the quality of human resources to be better and more competitive. It is necessary to improve the quality of education, which depends on the role of educators to produce quality human resources. The role of educators is very important to create interesting and quality learning conditions in higher education. Learning in the 21st century is changing very quickly. It is difficult to predict in terms of technology and information. Students must have the skills to think critically, innovatively, creatively, collaborate, and communicate, who can solve complex problems (Patacsil & Tablatin, 2017; Redhana, 2019).

21st-century education utilizes learning resources to gain knowledge to

make it easier to think in real terms (Ampo, 2020). The learning resources used by students are based on relevant research results so that students can increase their interest in understanding the material contained in a course in the form of monographs. Monographs are learning resources that have strategic importance to improve the quality of education. The monograph must be adapted to the needs of students and follow the lesson plan so that students easily understand the material. The monograph was developed based on the topics preferred by the lecturers, and the techniques used were based on needs analysis (Arini & Fadilla, 2022).

Agricultural Geography presents material related to agricultural development in Indonesia, namely

wetland and dryland agriculture. The material for agricultural development in dryland is interesting to study. Dryland agriculture has a characteristic in its management which is quite difficult to produce optimal agricultural production. In addition, dry land has a community associated with poverty. 2.1 billion people in the world live in dryland areas, and 50% of the population are poor people who depend on unsustainable agricultural activities (Araujo et al., 2021; Chapin III et al., 2009; United Nation, 2010).

South Kalimantan has the characteristics of wetlands in the form of peatlands or swamps so that the existing agriculture is dominated by tidal farming. Dry agricultural land is difficult to find in this area. Based on the observations, it was found that this caused the geography education students of Lambung Mangkurat University to still have difficulty studying dryland agriculture and its superior potential in the Agricultural Geography course. In addition, they have difficulty constructing concretely related to sustainable dryland agriculture management. High-quality textbooks are needed and become the main reference source in learning for student learning motivation (Ginancar, 1997; Novianto & Mustadi, 2015) like a monograph.

This monograph presents an understanding of the sustainable use of dry land with a geographical approach. This agricultural management is integrated and sustainable manner between physical and human aspects with due observance of conservation principles (Hadiyanti et al., 2021). This is to prevent environmental damage because the opportunities and potential for dryland agriculture are still quite large with land expansion, technological innovations, soil and water conservation, and regulation of cropping patterns. (Mulyani et al., 2011). Challenges in dryland management, both from land and farmers, there must be special attention for agricultural development and stabilization of food

security later (Rachman et al., 2020; Wahyunto & Dariah, 2014).

However, monographs that specifically cover dryland agriculture from a geographical point of view are still limited. This is because research on the development of dryland agriculture monographs to support agricultural geography courses is still rarely done. Several previous studies were only limited to developing modules and learning materials related to agriculture for high school, vocational, and university students who were still studying agriculture in general and only seen it from the point of view of agricultural science, not from a geographical approach (Dewi et al., 2021; Nurrohman et al., 2017; Situmorang, 2018). In addition, the lack of agricultural monographs in the library causes students to often look for references on the internet, which are still not following scientific standardization.

The researchers are interested in developing a monograph related to dryland agriculture studied with a geographic approach to fill the gaps in information related to development research. The results of this study can later be used as a reference for other researchers. Students can also use the product to improve their understanding of agricultural geography, especially dryland agriculture, and help them to reconstruct and develop knowledge as a whole (Khafid, 2019; Muzakki, 2021; Suparlan, 2019; Yeftha et al., 2020).

So, to maintain the quality of the monograph, it is necessary to review the content by experts so that users can use it. This research aims to develop a monograph book of Lahan dan Petani as a learning material for agricultural geography. This can later be used as a reference for students in agricultural geography courses and related sciences.

METHOD

This development research produced a monograph entitled "*Lahan*

dan Petani: Ubi kayu sebagai pendukung kawasan sentra industri Tape

Bondowoso". This development research is based on Sadiman's model (Figure 1).

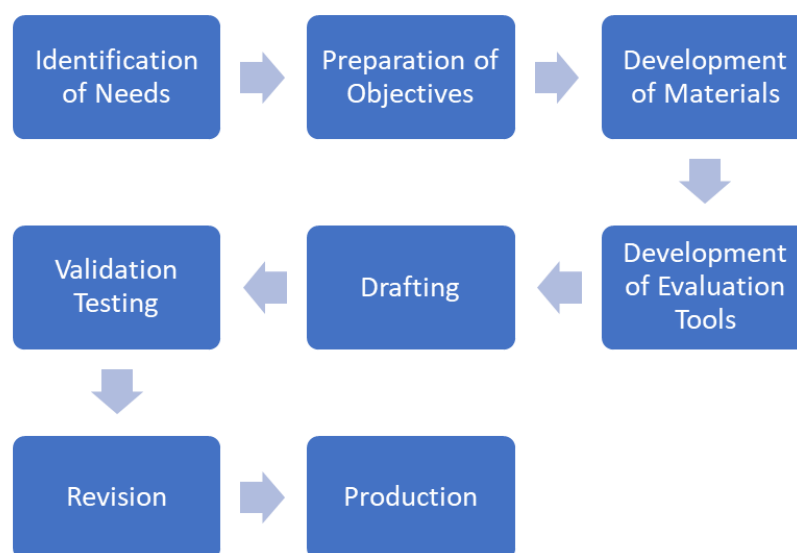


Figure 1. Sadiman Development Model (Sadiman, 2009)

The validation test for this monograph product is a material expert and a competent media expert related to geography and media science. Then, the development of this monograph was conducted on a limited trial to 6 students. The research instrument uses a questionnaire on a Likert scale with a value of 1 to 4. The criteria for answering a questionnaire with a Likert (Table 1).

Table 1. Questionnaire Answer Criteria with Likert Scale

Parameter	Indicator
4	Good
3	Good enough
2	Enough
1	Not good/

Source: (Arikunto, 2007)

The values of the tested questionnaires were analyzed using the following formula:

$$X = \frac{\sum x}{\sum n} \quad \text{and} \quad Va = \frac{X}{\sum N}$$

Note:

X = Average Score

$\sum x$ = Total Score of validators

$\sum n$ = Total validator

Va = Total of average score

X = Average score

$\sum N$ = maximum score

The results of the total mean are interpreted according to the validation test guidelines (Table 2).

Table 2. Validation Test Guidelines

Score	Interpretation
$3,5 < Va < 4$	Very Valid
$2,5 < Va < 3,5$	Valid
$1,5 < Va < 2,5$	Quite Valid
$Va < 1,5$	Invalid

Source: (Widoyoko, 2013)

The monograph is declared valid and suitable for use if the score obtained is at least or equal to 2.5. In addition, the expert team also provided suggestions and inputs that were used as guidelines for revising the monograph.

RESULT AND DISCUSSION

Cassava is one of the potentials of dryland agriculture in Wringin District as a center for the tape industry. Cassava is still being processed with limited farmer resources, capital, and technology as a potential food crop in dryland. Consequently, the economic condition of

the farmers is poor. For this reason, dryland agriculture is always connoted as marginal land with poor people. The world's population (2.1 billion) lives in dryland areas where 50% of the world's population is poor, does not have access to technology, depends on agriculture, and needs depend on natural resources to meet their livelihoods. Unsustainable agriculture (Araujo et al., 2021; Chapin III et al., 2009; United Nation, 2010) results in land degradation caused by population growth pressures and climate change (Reynolds et al., 2007). One of the efforts to improve the community's economic condition in dryland is to optimize plants according to land suitability and increase human resources in managing land resources so that the area can be optimized according to the existing potential.

In education 4.0, the learning process requires innovative media (Aristin et al., 2020) and learning resources in monograph books. Optimized learning resources will help educators achieve learning (Novianto & Mustadi, 2015). One of them is a monograph. The development of a monograph book entitled "*Lahan dan Petani: Ubi Kayu sebagai pendukung kawasan sentra industri Tape Bondowoso*" (Figure 2) must go through several stages (Figure 1) so that later it can be used as reference material by students. The uniqueness of this monograph book is as an information window related to dryland agriculture that

is helpful for students, especially those who live in swampy areas with tidal farming. This is because they cannot learn contextually about dry land.

For this reason, the material used to compose this monograph must be validated first by experts. A monograph validation test is needed to control the content of the existing material so that it remains in line with the characteristics and needs of students. This test is conducted by assessing the aspects of the material presented in this monograph and the media aspects related to the book's appearance. These validators are experts in geography, which have a background in geography and media development. Suggestions and inputs from material and media experts were used to revise the monograph.

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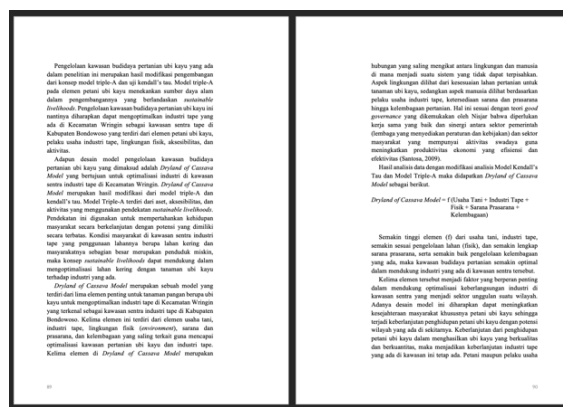


Figure 2. Monograph Book

The results of the material expert's assessment of the monograph with the title *Lahan dan Petani: Ubi kayu sebagai*

pendukung kawasan sentra industri Tape Bondowoso (Table 3).

Table 3. Result of Material Aspect Assessment by Validator

No	Rated Aspect	Average Score	Category
1	The truth of the contents of the concept	3.5	Very valid
2	Material depth	3.5	Very valid
3	Material achievement for competency achievement	3.5	Very valid
4	Clarity of material/concept	3.5	Very valid
5	Material update	3	Valid
6	Logical presentation systematic	3	Valid
7	Materials according to student needs	3.5	Very valid
8	The accuracy of the selection of images to explain the material	2.5	Valid
9	The material is presented simply and clearly	3.5	Very valid
10	The material is presented in a coherent manner	3.5	Very valid
Total Average Score		3.3 (82.5%)	

The results of the assessment of the material aspect by experts found that this monograph was declared valid at 82.5%, so it could be said that it was feasible to be used as learning material for Agricultural Geography with several revisions. The revisions came from

suggestions and input from material experts. The discussion on the condition of agricultural land would be better if it were equipped with a thematic map that could reinforce the description of the text that had been described.

Table 4. The Result of the Assessment of the Appearance of the Monograph by the Validator

No	Rated Aspect	Average Score	Category
1	Accuracy of cover color selection	3	Valid
2	Text color compatibility with the cover	3	Valid
3	The attractiveness of the cover selection	3.5	Very Valid
4	Image size accuracy	3	Valid
5	Image clarity	3.5	Very Valid
6	Interesting pictures in the module	3.5	Very Valid
7	Relevance of the image to the material (contextual)	3.5	Very Valid
8	Real pictures according to the concept	3.5	Very Valid
9	Image placement	3	Valid
10	Font selection accuracy	3	Valid
11	The suitability of the type and size of the letters	3	Valid
12	Font size consistency	3.5	Very Valid
13	The type and size of the letters are easy to read and follow the characteristics of students	3	Valid
14	Text placement accuracy	3	Valid
15	Monograph book size	3	Valid
Total Average Score		3.2 (80%)	

This monograph was also tested for media validation related to the book display aspect. The results of the media validation test (Table 4). The results of the media validation test showed that the appearance of this monograph book was declared feasible at 80%, and there were suggestions and input from media experts.

Suggestions and inputs are (1) the layout of the chapters still needs to be improved, (2) the layout of the page writing needs to be rearranged, (3) at the beginning of each chapter it is better to add images related to the chapters so that later readers will have an idea beforehand. The material to be discussed in the chapter, (4) the color on

the cover of the book should be chosen a bright color (not dark) to make it more attractive. However, experts also commented that, in general, monographs, both in terms of material and media, were appropriate and interesting.

Furthermore, the development of this monograph was conducted on a limited trial to 6 students after obtaining validation from media and material experts (Table 5).

Table 5. Limited Trial Results on Students

No	Aspect	Average Score	Category
1	Appearance	3.71	Very Valid
2	Contents	3.67	Very Valid
3	Language	3.57	Very Valid
Total Average Score		3.65 (91.3%)	

The results of a limited trial on students found that this monograph was declared feasible at 91.3% to be used as a reference book to support the Agricultural Geography course. The monograph book entitled "*Lahan dan Petani: Ubi Kayu sebagai Pendukung Kawasan Sentra Industri Tape Bondowoso*" is appropriate to be used as a reference for Agricultural Geography courses according to the needs of geography education students. Some agricultural geography learning materials still cover general descriptions of agriculture in Indonesia and wetland agriculture such as rice fields. This research is different from the previous research because it describes and reveals additional material about dryland agriculture with a geography approach that is not yet listed in the agriculture book. So, it can increase students' knowledge about dryland agriculture, especially for students who live in wet farms, likely swamp.

Students also need books related to agricultural geography that specifically discuss agriculture in Indonesia, especially dryland agriculture. The lack of agricultural geography books that cover dryland agriculture causes students to lack an understanding of the conditions of

dryland agriculture in detail. This happens to students who live in areas where agriculture is characterized by wetlands such as swamps. So, we need an applicative monograph book to improve student abilities and construct student competencies following the goals to be achieved. The statement supports that the quality of learning is closely related to the availability of quality books (Alkatiri, 2012).

The development of this monograph also has a novelty that is useful in managing dry agricultural land. The novelty is in the form of the dryland of Cassava Model, which is a conceptual model design in developing dry agricultural land with cassava potential. This model results from the development of the Triple-A model and Kendall's tau model. This model has five important elements in farming, industry, physical environment, facilities and infrastructure, and institutions. The elements will later be useful for maintaining superior potential in a region. The material presented can support learning objectives in the Agricultural Geography course with the topic of agricultural development in Indonesia, especially for dryland agriculture.

This monograph that discusses a specific focus in science can be used as an alternative reference for students and lecturers. Also, it can facilitate students to expand and improve learning outcomes based on research results with relevant literature reviews and scientific developments. The latest research results are important to increase knowledge as a fulcrum in the development of education (Amin, 2010; Fadli & Sudrajat, 2020).

CONCLUSION

The developed monograph "*Lahan dan Petani: Ubi Kayu sebagai Pendukung Kawasan Sentra Industri Tape Bondowoso*" has been declared feasible as a supporting learning resource in the agricultural geography course based on

the positive responses from students. It is hoped that it can contribute to education, especially in increasing students' knowledge contextually. The researcher recommends the next researcher conduct a broad trial and identify the effectiveness of monographs in increasing students' insight regarding dryland agriculture. In addition, other researchers should innovate in increasing the availability of learning resources to support lecturer learning.

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