

wan_2020_IOP_Conf._Ser._Earth_Environ._Sci._486_012127.pdf
by

Submission date: 23-Sep-2022 09:45PM (UTC+0700)

Submission ID: 1907121917

File name: wan_2020_IOP_Conf._Ser._Earth_Environ._Sci._486_012127.pdf (473.76K)

Word count: 2943

Character count: 16011

PAPER · OPEN ACCESS

Integrated model of local resource management for agriculture and poultry husbandry in rural area: A service learning program in Sidrap Regency Indonesia

11
To cite this article: I Ridwan *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **486** 012127

7
View the [article online](#) for updates and enhancements.

You may also like

- 14
- [Script knowledge representation in game designing for instructional media](#)
D.D S Fatimah
- 6
- [Reflective Thinking Profile for Junior High School Students in Service Learning-based Science](#)
Yudist Prasetyo Rahmat, Insih Wilujeng and Asri Widowati
- 8
- [Application of Service-Learning for Developing Curiosity, Responsibility, and Honesty of Biology Education's Students, Sanata Dharma University](#)
L.D Handoyo, Paidi and P Suparno



The Electrochemical Society
Advancing solid state & electrochemical science & technology

242nd ECS Meeting
Oct 9 – 13, 2022 • Atlanta, GA, US
Presenting more than 2,400 technical abstracts in 50 symposia

ECS Plenary Lecture featuring M. Stanley Whittingham,
Binghamton University
Nobel Laureate – 2019 Nobel Prize in Chemistry

Register now!

This advertisement features the ECS logo, a portrait of M. Stanley Whittingham with his Nobel Prize medal, a 'Register now!' button with a checkmark, and a background image of a person holding a tablet displaying various scientific icons.

Integrated model of local resource management for agriculture and poultry husbandry in rural area: A service learning program in Sidrap Regency Indonesia

I Ridwan¹, A Yassi¹, Budiman², M Hasan², D Wulandari², H Hamdayanti¹,
N Juita¹, A Amiruddin¹ and M Galib³

¹Faculty of Agriculture Universitas Hasanuddin, Makassar 90245 Indonesia.

²Faculty of Animal Husbandry Universitas Hasanuddin, Makassar 90245 Indonesia.

³STIM Lasharan Jaya, Makassar, 90231 Indonesia.

E-mail: ifayanti@unhas.ac.id

Abstract. The service learning program is one of the partnership activities to contribute significantly to the university's role for the community, industry, local government and community groups who want to be economically and socially independent. This program offers a solution to solve problems by conducting partnership activities between institutions, local government and the community. One of the solutions from the low productivity of farmers from rainfed lowland agriculture and poultry husbandry is to increase farmers' knowledge and skills through the application of science and technology both in the production stage and post-harvest processing. Therefore, the concept of "petik, olah, jual" (harvest, process, sell) can be implemented well. The paper described the implementation of service learning conducted by students of Universitas Hasanuddin in one of poor villages in Sidrap Regency. With the implementation of science and technology, the goal of community empowerment in the context of poverty alleviation through local resource management is expected to be achieved.

1. Introduction

Poverty is a phenomenon that still exists in developing countries such as Indonesia. Development whose main goal is to improve people's welfare cannot be separated from how the government attempts to reduce the level of poverty, especially in rural areas. The World Bank Study [1] suggests that although Indonesia's strong economic growth has helped reduce poverty, however, the rate of decline in poverty in the last decade has been reduced and inequality has increased more than neighbouring countries. Poor families are forced to provide the majority of the housing budget to meet food needs [2]. This alleviation and inequality requires assistance from all parties in Indonesia: government, research institutions, the private sector and non-governmental organizations.

One of the ways to reduce rural poverty is through community empowerment. In the Law efforts for community empowerment, especially in rural areas, it has been stated in the Law of the Republic of Indonesia No. 6 of 2014 concerning Villages, Article 67 paragraph 2: "Villages are obliged to develop village community empowerment", which is strengthened in the Government Regulation of the Republic of Indonesia No. 43 of 2014 concerning Implementation Regulations of Law No. 6 of 2014 concerning Villages, in articles 126 to 131 concerning Empowerment and Assistance of Village Communities. This states that the government and regional governments up to the district and village



Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence. Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

levels are obliged to carry out the empowerment of village communities in an effort to encourage community participation in development through the utilization of available local resource potential.

To alleviate poverty through community empowerment, it can be done by managing resources in the rural areas. Nevertheless, the level of skills and knowledge of the community is very influential on the implementation and success of this empowerment. Efforts to empower the community should involve efforts to increase the knowledge and skills of the community so that they can motivate community participation in managing the agriculture and livestock sector which is superior in the rural areas in Indonesia. With adequate local resources and a high level of community participation, these two sectors can be managed in an integrated manner. Hence, the integration is expected to be able to increase the production and added value of products so as to create a sustainable production system.

South Sulawesi Province is one of the regions in Indonesia that still faces poverty problems. Even though it is one of the provinces that has a fairly good economic growth rate the poverty rate in South Sulawesi Province is still quite high [3]. Based on the activities of the National Socio-Economic Survey (Senas) by BPS, the number of poor people in South Sulawesi until December 2014 was 806,350 people or 9.54 percent of the total population in South Sulawesi Province. The number of poor people is still largely dominated by rural areas which reached 12.25 percent, while in urban areas it reached 4.93 percent [4]. Sidrap Regency is one of the regions in South Sulawesi province which is known as a center for rice and poultry, especially ducks. However, the level of production of these two commodities in Duapitue District is still relatively low. This is because some of the land in this area is rainfed lowland and the level of knowledge and skills of farmers is low in applying the right cultivation strategies on this land. Farmers must understand the characteristics and models of cropping patterns that are suitable for application to rainfed rice fields. One of them is by implementing organic farming. The limited availability of water during the dry season is the main characteristic of this land, and the technology for water retention will greatly help farmers in utilizing this land. On the other hand, duck farming that is applied by farmers in this area is still very limited. The target community of empowerment generally maintains broiler-type ducks with a semi-intensive maintenance system that is without using cages and without providing rations that are suitable for their livestock needs so that egg and meat production is not optimal. An integrated management pattern is needed between agriculture and poultry farming so that both fields can support each other sustainably.

2. Methodology

The service learning program was carried out in Duapitue District, Sidrap Regency, South Sulawesi Province in one month since July to August 2018. The program consisted of three stages namely: determination of community-based problems and solution using focused group discussion (FGD) method, implementation of the programs through counselling, training and demonstration plot based on the FGD, and evaluation of the program. Fourteen students from agriculture and animal husbandry were involved in this program. Two demonstration plots were made consisted of plot of rainfed rice organic farming and intensive poultry husbandry, respectively. Training and counselling were conducted on rainfed organic farming, meat type duck husbandry, and post production processing of duck eggs into salted eggs. The training and counselling were attended by community in the partner villages. Introduced model was shown in Figure 1.

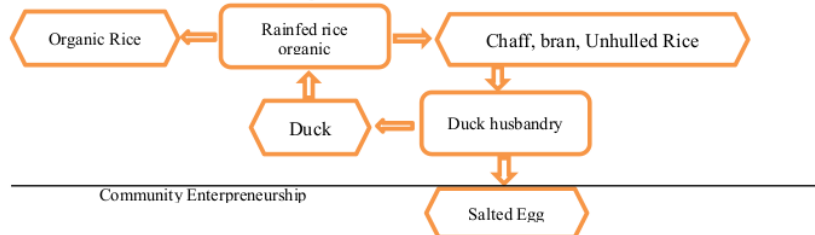


Figure 1. Integrated model of rainfed rice organic farming and duck husbandry.

3. Implementation of service learning program

Results from focus discussion group was shown in Table 1. Problems faced by the community mostly related to rice production in the rainfed including pest and disease, drought and lower production compared to production obtained in the irrigated paddy. In addition, farmers were lacking in the information and capital for conducting an intensive duck husbandry. Furthermore, eggs production from duck husbandry were low and farmers do not have any knowlwdge on how process the eggs into something more valuable such as salted eggs. The implementation of work programs at locations is described in Table 1.

Table 1. Problems and solution of farmers in Duapitue District, Regency of Sidrap from Focus Groups Discussion (FGD)

Problems	Solution
Low rice production in rainfed paddy land	Training and counselling and demonstration plot for organic farming in rainfed.
Pest and disease	Training and counselling and demonstration plot for liquid organic fertilizers and bio-pesticide
Low production of duck husbandry	Training and counselling and demonstration plot for intensive duck husbandry
Semi intensive duck husbandry	Training and counselling and demonstration plot for intensive duck husbandry
No processing on local poultry products	Training and counselling and demonstration plot for entrepreneurship of salted eggs

Following the announcement of acceptance of student enrollment, there were 14 students who were accepted as participants in the service learning program (table 2). Table 2 shows that students registered as participants consisted of 7 (seven) women and 7 (seven) men. Student competency distribution consists of agrotechnology study program (8 students), agricultural engineering study program (1 student), livestock production (1 student), Livestock Product Technology (2 students) and social economic livestock (1 student). The agrotechnology study program consists of 4 (four) interests in agriculture / agronomy, 3 (three) Land Sciences, and 1 (one) Pests and Plant Diseases. Following the program seminar, several programs were carried out with the following details:

3.1. Counseling and training in organic rice farming.

Extension activities are centered on the Village Mosque If it is followed by residents, the village farmer groups If and the Village Head and its officers. The activity was carried out at night considering the busyness of the residents during the daytime which made it difficult for residents to attend this activity. Counseling was continued with training in making vegetable POC and Pesticides by KKN PPM participants who had previously participated in technical debriefing. Making POC and vegetable pesticides received special attention from the community and farmer groups because it is a new thing for farmers. So far, agriculture in rainfed rice fields has only been carried out with simple cultivation techniques without knowing that by applying organic farming, namely the addition of compost and organic matter, the soil structure can be improved so that it can store water for longer. In addition, the use of varieties that are tolerant to drought will be able to increase production in rainfed lowland areas because of the genotypic mixtures of plants that are capable of producing even in poor water conditions. At the end of the activity, seed assistance was given to farmer groups in the partner villages so that it could be used for the following planting season on rainfed types (Figure 2).



Figure 2. Counseling and training for organic rice farming

3.2. Intensification of duck husbandry

This program is carried out through counselling activities to residents and farmer groups related to good duck farming. So far, residents only release their ducks in the yard to find their own food (Table 2).

Table 2. Feeding and feeding systems for duck animals in Bila village, Dua Pitue District, Sidrap Regency. (n = 9)

Duck Husbandry System	(%)	Feeding	(%)
Ekstensive	33.3	Rice bran	66.7
Semi Intensive	44.4	Rice barn+ unhulled rice + rice grain skin	22.2
Intensive	22.2	Restaurant industrial waste	11.1
Total	100	Total	100

Source: Primary data after processing, 2018.

With the demonstration plot made by service learning students, community and groups of farmers understand the importance of feeding with a balanced formulation for the nutrition of duck livestock. At the end of the program, livestock groups were given assistance in the form of juvenile ducklings so that knowledge and skills in duck farming can be sustainable and can be developed by farmers in partner locations (Figure 3).



Figure 3. Preparation of duck feeding and duck cage demplot

3.3. Entrepreneurship in duck poultry products.

The salted egg entrepreneurship program aims to improve the understanding and skills of business groups and housewives in the village when it comes to the production, packaging and marketing processes that can be carried out by residents. Counseling and training are carried out by KKN PPM students from the field of animal husbandry technology. This activity was attended by local business groups and residents of Bila (Figure 4).



Figure 4. Extension and entrepreneurship training for duck eggs.

¹⁶ Based on the results of surveys and interviews and the distribution of questionnaires to the community of Bila Village, Dua Pitue Subdistrict, Sidrap Regency, specifically those who are female and housewives who are used as respondents about Salted Egg Making Training, it can be concluded that the villagers in general did not know how to make salted eggs. Some respondents knew how to make it, but reluctant to make salted eggs. This is due to several factors, for example because the price of duck eggs were quite expensive compared to chicken eggs and also taste factors. Most of the people who want to consume salted eggs, they prefer to buy in the market rather than making their own. People also do not know the potential or business opportunities for salted eggs. During training and counseling, the community was given training in the process of making salted eggs. The community was taught two techniques for making salted eggs, namely with the use of a mixture of rubbing ash, salt and water, and by soaking in a salt water solution. The community was also taught the making of salted eggs of various flavors.

In addition, communities were also given counseling about the nutritional value, price opportunities, good packaging to promising business potential. After conducting training and counseling on salted egg entrepreneurship, a follow-up survey was carried out in the form of a questionnaire to the people who had participated in the education and training. The conclusion from the survey results is that the community already knows how or the process of making salted eggs, can

already distinguish which materials are good for making salted eggs, the intention to make a business of salted eggs, and feel helped by the existence of this extension training.

Entrepreneurship program for salted egg also included training in production and packaging the salted egg. Procedure in the making of salted egg is shown in Figure 5. The process consisted of preparation of materials such as duck eggs, water, and the mix of table salt and rubbing ash (a combustion waste or ash from rice husks). Duck eggs previously rubbed with sandpaper were mixed into a mix of water, table salt and rubbing ash. Eggs were then covered with the mix and kept within a week. The principle of making salted eggs is the occurrence of NaCl salt ionization process which then diffuses into the egg through the pore shells [5]. To increase the value of the product, the raw material can be added with other flavor enhancer such as garlic etc. Packaging of the salted egg was done by cooking the egg and put it into a mica wrap and labelled (Figure 6).



Figure 5. The making of duck salted egg



Figure 6. Label and packaging of the duck salted egg

4. Conclusions

From the service learning program implementation in Sidrap Regency, it can be summarized as follows:

- Counseling and training carried out by the students in the village received positive response, especially in training on making POC and vegetable pesticides and duck farming.
- With the implementation of the service learning program, there is an increase in understanding and skills in rural communities. When it comes to organic rice farming in rainfed lowland areas, the use of drought tolerant varieties, formulation and feeding of ducks in cages, production, packaging and marketing of salted eggs.

Acknowledgment

Highest appreciation given to LP2M and UPT of the University Hasanuddin Community Service for the PPMUH KKN grant and to the Village Head of Bila and the officers who have assisted the implementation of this program.

References

- [1] World Bank 2014 *Pengentasan Kemiskinan di Indonesia* Online Source: <http://www.worldbank.org/in/country/indonesia/brief/reducing-extreme-poverty-in-indonesia>. [15 June 2018].
- [2] Rusastra I W and Napitupulu T A 2007 Karakteristik wilayah dan keluarga miskin di pedesaan *Pros. Seminar Nasional PSEKP* Bogor, 21 August 2007.
- [3] Azwar and Subekan A 2016 Analisis determinan kemiskinan di Sulawesi Selatan *J. Tata Kelola & Akuntabilitas Keuangan Negara* **2** 1– 25.
- [4] BPS Sulawesi Selatan 2014 *Jumlah dan Persentase Penduduk Miskin Sulawesi Selatan Tahun 2008-2014* <https://sulsel.bps.go.id/linkTabelStatis/view/id/29> [15 June 2017].
- [5] Wulandari Z, Rukmiasih, Suryati T, Budiman C, Ulupi N 2014 *Teknik pengolahan Telur dan daging Unggas* (Bogor: IPB Press).

ORIGINALITY REPORT

14%

SIMILARITY INDEX

11%

INTERNET SOURCES

9%

PUBLICATIONS

6%

STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to National School of Business Management NSBM, Sri Lanka Student Paper	2%
2	core.ac.uk Internet Source	2%
3	journal.unhas.ac.id Internet Source	2%
4	Submitted to Iain Palopo Student Paper	1%
5	ijmmu.com Internet Source	1%
6	Muhammad Noor Kholid, Sekar Telasih, Lingga Nico Pradana, Swasti Maharani. "Reflective Thinking of Mathematics Prospective Teachers' for Problem Solving", Journal of Physics: Conference Series, 2021 Publication	1%
7	repository.unhas.ac.id Internet Source	1%

8	repository.usd.ac.id Internet Source	1 %
9	docobook.com Internet Source	1 %
10	jurnal.untagsmg.ac.id Internet Source	<1 %
11	umpir.ump.edu.my Internet Source	<1 %
12	www.fgcbolsa-fgcfinancialmarkets.info Internet Source	<1 %
13	www.wider.unu.edu Internet Source	<1 %
14	A V Lavrishchev, V S Tynchenko, A V Murygin, S O Kurashkin, Yu N Seregin, V E Petrenko. "Selecting the main modes of the diffusion welding process of polymeric materials", Journal of Physics: Conference Series, 2020 Publication	<1 %
15	Rodiyah .. "Management of Implementation of Village Government in Empowering Village Enterprises (BUMDes)", KnE Social Sciences, 2019 Publication	<1 %
16	serisc.org Internet Source	<1 %

Exclude quotes On

Exclude matches < 5 words

Exclude bibliography On