



Challenges and innovative solutions for increasing agricultural productivity in Indonesia

Journal:	<i>International Journal of Engineering Business Management</i>
Manuscript ID	Draft
Manuscript Type:	Review Article
Keywords:	Agriculture Crowdfunding, Indonesian agriculture, Indonesian agriculture challenges, Indonesian agricultural information system, Agricultural fundraising information system
Abstract:	<p>As the largest archipelagic-based country in the world with a land area of 1,919,440 km² and an ocean area of 3,273,810 km², with the largest population working in the agricultural sector, Indonesia deserves to be called an agrarian country. but recently the growth of gross domestic product in terms of the agricultural sector has decreased, between 2018 and 2019 it decreased by 0.25%, in 2019 and 2020 decreased by 1.93%.</p> <p>This study aims to look at the challenges faced in agricultural development in Indonesia and propose solutions to overcome unproductive land in Indonesia. The results show that the area of unproductive agricultural land in Indonesia has increased from year to year, there are 14 of 34 provinces in Indonesia experiencing an increase in the amount of unproductive land, and overall from a total of 34 provinces in Indonesia the number of unproductive lands reaches 11,771,388 hectares with potential income from agricultural products reaching 24,852,077,020 tons/year.</p> <p>In this study, it is proposed to develop an information technology platform for fundraising with a crowdfunding system that can be used to finance agricultural projects to be developed on unproductive land so that it can suppress the growth rate of unproductive land in Indonesia and provide mutually beneficial cooperation between farmers and investors.</p>

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Challenges and Innovative Solutions for Increasing Agricultural Productivity in Indonesia

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Abstract

As the largest archipelagic-based country in the world with a land area of 1,919,440 km² and an ocean area of 3,273,810 km², with the largest population working in the agricultural sector, Indonesia deserves to be called an agrarian country. but recently the growth of gross domestic product in terms of the agricultural sector has decreased, between 2018 and 2019 it decreased by 0.25%, in 2019 and 2020 decreased by 1.93%. This study aims to look at the challenges faced in agricultural development in Indonesia and propose solutions to overcome unproductive land in Indonesia. The results show that the area of unproductive agricultural land in Indonesia has increased from year to year, there are 14 of 34 provinces in Indonesia experiencing an increase in the amount of unproductive land, and overall from a total of 34 provinces in Indonesia the number of unproductive lands reaches 11,771,388 hectares with potential income from agricultural products reaching 24,852,077,020 tons/year. In this study, it is proposed to develop an information technology platform for fundraising with a crowdfunding system that can be used to finance agricultural projects to be developed on unproductive land so that it can suppress the growth rate of unproductive land in Indonesia and provide mutually beneficial cooperation between farmers and investors.

Keywords : Agriculture crowdfunding, Agricultural crowdfunding information system, Indonesian agriculture challenges, Indonesian agriculture, Indonesian agricultural opportunities and challenges

INTRODUCTION

Indonesia is the largest archipelagic country in the world [1], with a total area of about 190 million hectares which has agricultural land reaching 55 million hectares [2]. Indonesian farmers only manage small-scale agriculture [3] and in fact in Indonesia the growth of rural agriculture greatly reduces poverty in rural areas [4], so the Indonesian government should pay attention to the growth of the Indonesian agricultural sector. In 2013 the contribution of the agricultural sector in the creation of Indonesia's gross domestic product (GDP) was 20.40% [5]. the average GDP growth of the agricultural sector in the last five years is slightly lower than the average GDP growth of the agricultural sector for the period 2005-2009 [6]. Some of the causes of the decline in the gross domestic product of the agricultural sector are due to lack of education and understanding of technology, high costs of agricultural management and increasing demand forcing farmers to sell their fields [7].

Based on data from the Central Statistics Agency of the Republic of Indonesia, the number of uncultivated agricultural land from year to year in each province has increased. Table 1 is the area of uncultivated or unproductive agricultural land based on 34 provinces in Indonesia.

Tabel 1. Area of Unproductive Agricultural Land in Hectares

Provinsi	Luas Lahan Pertanian Tidak Produktif		
	2017	2018	2019
ACEH	271.792	270.586	299.701
SUMATERA UTARA	275.070	294.045	310.973
SUMATERA BARAT	214.192	221.169	200.134
RIAU	549.341	494.375	513.277
JAMBI	272.763	222.107	255.851
SUMATERA SELATAN	486.359	577.544	474.587
BENGKULU	84.495	90.682	86.888
LAMPUNG	41.090	41.148	67.93
KEP. BANGKA BELITUNG	55.987	59.174	54.39
KEP. RIAU	89.690	96.607	86.945
DKI JAKARTA	150	945	77
JAWA BARAT	9.572	18.735	13.730
JAWA TENGAH	3.313	10.962	7.567
DI YOGYAKARTA	2.376	403	1.766
JAWA TIMUR	14.014	18.002	20.812
BANTEN	10.888	10.997	5.345
BALI	410	446	447
NUSA TENGGARA BARAT	47.317	46.961	48.844
NUSA TENGGARA TIMUR	791.975	821.26	770.579
KALIMANTAN BARAT	884.662	877.436	945.192
KALIMANTAN TENGAH	1.431.461	1.464.528	1.487.389
KALIMANTAN SELATAN	134.395	137.623	133.999
KALIMANTAN TIMUR	815.249	770.641	516.673
KALIMANTAN UTARA	362.12	155.477	255.154
SULAWESI UTARA	71.451	61.148	57.519
SULAWESI TENGAH	441.384	377.286	332.88
SULAWESI SELATAN	101.911	105.435	96.108
SULAWESI TENGGARA	222.909	227.712	206.502
GORONTALO	49.981	50.088	50.014
SULAWESI BARAT	54.288	60.983	60.565
MALUKU	697.902	766.555	919.942
MALUKU UTARA	20.591	20.754	13.525
PAPUA BARAT	2.280.872	1.019.858	2.091.939
PAPUA	1.378.042	1.385.532	1.384.185
JUMLAH	12.168.012	10.777.200	11.771.388

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4 Quoting from the Round Table Discussion "Finding Alternatives for Agricultural
5 Financing" organized by the Department of Agribusiness, Faculty of Economics and
6 Management, IPB in collaboration with the Coordinating Ministry for Economic Affairs of the
7 Republic of Indonesia, almost 90 percent of independent farmers use their own capital to
8 finance their agricultural businesses. Every planting season arrives, farmers seek capital from
9 various ways in order to be able to plant. Farmers find it difficult to get access to capital from
10 various sources. "The loan sharks give loans at high interest rates. Banks find it difficult to lend
11 because they collide with banking conditions. Based on data [8] National Socio-Economic
12 Survey 2016, stated that only 15% of farmers access credit at the bank, there are credit
13 problems felt by farmers through banking, such as bureaucratic procedures, high risk, and high
14 interest rates, whereas if farmers choose to make credit to non-bank or informal institutions
15 will certainly be more detrimental because the interest rate is very high.

16
17 Seeing the condition of access to capital that is difficult for farmers to obtain, there
18 needs to be a more massive effort to involve the community in dealing with agricultural capital
19 problems, namely the crowdfunding system which is expected to open access to capital for
20 farmers and investors through a joint funding system.

21
22 Crowdfunding is a community-based activity carried out by a group of people who
23 gather to invest through the internet [9]. The advent of crowdfunding marks a shift in funding
24 sources. With the help of today's technological advances and internet facilities, entrepreneurs
25 can take advantage of web-based social networks to raise adequate capital for specific projects
26 in finance, philanthropic endeavors, business and the arts [10]. In crowdfunding they jointly
27 raise money to invest [11].

28
29 This crowdfunding platform is a manifestation of financial technology (fintech) which
30 is currently starting to develop in Indonesia, this is in line with Law No. 41 of 2009 which
31 mandates the Government to invite people to cultivate agricultural land with the principles of
32 togetherness, efficiency and make justice, sustainable, with environmental insight and
33 independence, as well as by maintaining balance, progress, and national economic unity [12].

34 35 **RELATED WORK**

36
37 From the results of scientific searches that have been carried out, research related to
38 agricultural problems and the development of a crowdfunding system have been carried out
39 from various scientific angles including those that have been carried out by the following
40 researchers:

41
42 [13] Buerhan Saiti, Muhibullah Afghan, Nazrul Hazizi Noordin, (2018) "Financing
43 agricultural activities in Afghanistan: a proposed salam-based crowdfunding structure, his
44 research offers an investment platform with the Shari'ah system involving a local bank called
45 Bank of Khartoum, by providing several advantages for both potential investors and farmers
46 or entrepreneurs. Research in 2019 by [14] with the research title "Sharia Financing
47 Mechanisms for Small and Medium Enterprises in the Agricultural Sector". or top-down and
48 bottom-up there is a strong synergy. The government through ministries consisting of the
49 Ministry of Agriculture, the Ministry of Cooperatives and Small and Medium Enterprises, and
50 the Ministry of Finance work together and coordinate across sectors to produce harmonized
51 policies and support the development of Islamic finance for the agriculture and MSME sectors.
52 A policy of encouragement to channel 20-30% of ministry funds to these two sectors to support
53 accelerated and sustainable development. Then issue policies related to supporting institutions
54 such as sharia agricultural insurance, sharia insurance guarantee institutions, rating agencies
55 and higher education participation in community empowerment in the broadest sense.

56
57 [15] In his research entitled "Perspectives of Crowdfunding as Innovative and
58 Alternative Finance Platform in Latvia" in his research stated that the population of Latvia
59
60

supports the idea of crowdfunding because it has a good impact on the agricultural sector. [16] in his research entitled "Islamic Crowd-funding as The Next Financial Innovation in Islamic Finance: Potential and Anticipated Regulation in Indonesia" in this study states that the existence of crowdfunding and Islamic finance is complementary, crowdfunding activities are in line with Sharia principles in Indonesia.

[17] In a study entitled "A discourse on the potential of crowdfunding and Islamic finance in the agricultural sector of East Java, Indonesia". This study proposes a model of agricultural financing in East Java known as the Integrated Agricultural Crowdfunding model, using Sharia financing instruments through a crowdfunding platform which is expected to offer farmers in East Java to meet liquidity constraints and help the Indonesian Government accelerate social entrepreneurship innovation for sector development. agriculture in East Java. [18] In a study entitled "Distinctions of The Crowdfunding Model in Agriculture" crowdfunding is a promising tool to increase funding for innovative projects and investment in agriculture.

Based on the results of the literature review and research results from several researchers who have written in the background of the problem, several conclusions can be drawn including:

1. Limited sources of capital and low accessibility of farmers due to constraints on interest rates and the obligation to submit guarantees when borrowing capital.
2. The main reason for borrowing capital is because there is still a lack of personal capital plus the high cost of living
3. The willingness and commitment of farmers and the government to work together still needs to be improved
4. There is no harmonized policy among related Ministries that supports the development of Islamic finance for the agriculture and MSME sectors
5. The era of information technology has encouraged the growth of crowdfunding financing schemes that are proven to be able to open access to capital for farmers
6. The crowdfunding principle is in line with Sharia principles which are widely known by the Indonesian people

RESEARCH METHOD

3.1 Analysis of Agricultural Land Use and Productivity in Indonesia

The use of agricultural land in Indonesia is generally planted with horticultural crops including onions, potatoes, carrots, mustard greens, kale and so on from vegetables, for the area and type of agricultural land in Indonesia is shown in Table 2.

Table 2. Area of Agricultural Land in Indonesia, 2018 - 2019

Land Type	Year		Growth (%)
	2018	2019	2019 over 2018
Wetland	7.105.145	10.677.887.15	43.06
Garden	11.696.845	12.393.092	5.95
Shifting Cultivation	5.256.324	5.188.658	-1.29
Temporarily Unused Land	10.777.200	11.771.388	9.22

Indonesia is an archipelagic country consisting of thousands of islands with 34 provinces having agricultural land spread across various provinces with a very diverse area and productivity of agricultural land. Table 3 shows the area of rice farming land per province based on productivity.

Tabel 3. Rice Farming Area and Productivity Per Province in Indonesia

Province	Land area (ha)	Productivity (ku/ha)	Production (ton)
	2019	2019	2019
ACEH	310.012.46	55.30	1.714.437.60
SUMATERA UTARA	413.141.24	50.32	2.078.901.59
SUMATERA BARAT	311.671.23	47.58	1.482.996.01
RIAU	63.142.04	36.56	230.873.97
JAMBI	69.536.06	44.57	309.932.68
SUMATERA SELATAN	539.316.52	48.27	2.603.396.24
BENGKULU	64.406.86	46.03	296.472.07
LAMPUNG	464.103.42	46.63	2.164.089.33
KEP. BANGKA	17.087.81	28.56	48.805.68
BELITUNG			
KEP. RIAU	356.27	32.30	1.150.80
DKI JAKARTA	622.59	53.96	3.359.31
JAWA BARAT	1.578.835.70	57.54	9.084.957.22
JAWA TENGAH	1.678.479.21	57.53	9.655.653.98
DI YOGYAKARTA	111.477.36	47.86	533.477.40
JAWA TIMUR	1.702.426.36	56.28	9.580.933.88
BANTEN	303.731.80	48.41	1.470.503.35
BALI	95.319.34	60.78	579.320.53
NUSA TENGGARA	281.666.04	49.78	1.402.182.39
BARAT			
NUSA TENGGARA	198.867.41	40.82	811.724.18
TIMUR			
KALIMANTAN	290.048.44	29.23	847.875.13
BARAT			
KALIMANTAN	146.144.51	30.35	443.561.33
TENGAH			
KALIMANTAN	356.245.95	37.69	1.342.861.82
SELATAN			
KALIMANTAN TIMUR	69.707.75	36.41	253.818.37
KALIMANTAN	10.294.70	32.40	33.357.19
UTARA			
SULAWESI UTARA	62.020.39	44.79	277.776.31
SULAWESI TENGAH	186.100.44	45.40	844.904.30
SULAWESI SELATAN	1.010.188.75	50.03	5.054.166.96
SULAWESI	132.343.86	39.27	519.706.93
TENGGARA			
GORONTALO	49.009.95	47.18	231.211.11
SULAWESI BARAT	62.581.47	47.96	300.142.22
MALUKU	25/976.85	37.82	98.254.75

MALUKU UTARA	11.700.50	32.43	37.945.64
PAPUA BARAT	7.192.15	41.63	29.943.56
PAPUA	54.131.72	43.48	235.339.51
TOTAL	10.677.887.15	51.14	54.604.033.34

The average rice production in 34 provinces in Indonesia reaches 1,606,001 tons with an average land area of 314,055.21 hectares, meaning that every 1 hectare of paddy field produces 5 tons of rice. The highest amount of rice production is owned by Central Java Province at 9,655.653.98 tons and the lowest is in the Riau Islands Province at 1,150.80 tons.

3.2. Analysis of Agricultural Products from Unproductive Land

To see how big the potential economic value of unproductive agricultural land in Indonesia is, we need to see how large the area of unproductive land is, if the unproductive land is managed into productive land assuming 1 hectare produces 5 tons, then based on data on agricultural land area unproductive as shown in table 4, the potential for production income is very large

Table 4. Potential Agricultural Income in Tons in 2019

Province	Area of Unproductive Land (Ha)		Income Potential (ton)
	2019	2019	
ACEH	299.701		1.498.505
SUMATERA UTARA	310.973		1.554.865
SUMATERA BARAT	200.134		1.000.670
RIAU	513.277		2.566.385
JAMBI	255.851		1.279.255
SUMATERA SELATAN	474.587		2.372.935
BENGKULU	86.888		434.440
LAMPUNG	67.93		339.650
KEP. BANGKA			
BELITUNG	54.39		271.950
KEP. RIAU	86.945		434.725
DKI JAKARTA	77		385
JAWA BARAT	13.730		68.650
JAWA TENGAH	7.567		37.835
DI YOGYAKARTA	1.766		8.830
JAWA TIMUR	20.812		104.060
BANTEN	5.345		26.725
BALI	447		2.235
NUSA TENGGARA BARAT	48.844		244.220
NUSA TENGGARA TIMUR	770.579		3.852.895
KALIMANTAN BARAT	945.192		4.725.960

KALIMANTAN		
TENGAH	1.487.389	7.436.945
KALIMANTAN		
SELATAN	133.999	669.995
KALIMANTAN TIMUR	516.673	2.583.365
KALIMANTAN		
UTARA	255.154	1.275.770
SULAWESI UTARA	57.519	287.595
SULAWESI TENGAH	332.88	1.664.4
SULAWESI SELATAN	96.108	480.54
SULAWESI		
TENGGARA	206.502	1.032.510
GORONTALO	50.014	250.07
SULAWESI BARAT	60.565	302.825
MALUKU	919.942	4.599.71
MALUKU UTARA	13.525	67.625
PAPUA BARAT	2.091.939	10.459.695
PAPUA	1.384.185	6.920.925
TOTAL	11.771.388	24.852.077.020

Assuming that every 1 hectare of agricultural land produces 5 tons of agricultural products, the total production of unproductive land in Indonesia when processed produces 24,852,077,020 tons/year.

If the total unproductive land in Indonesia is processed into productive rice farming land, if we refer to research [21] regarding the analysis of income and profitability of rice farming in Indramayu district in 2012-2013 with the average total capital requirements of farmers in two periods of planting is around Rp. 18,456,817.14 so that in 1 year farmers need a capital of Rp. 36,913,634.28/hectare or around Rp. 4,614,204.28 per month with a potential income of rice production per year with 2x harvests of 11 tons, it will generate potential income from sales in the form of harvested dry rice for the Indramayu district at the beginning of 2013 amounting to Rp. 4.411/kg so that the total income of farmers from 11 tons of production can reach Rp. 48,532,000. If the dry grain harvested by farmers is turned into rice, the selling price will increase and the profits obtained by farmers will also increase.

3.3. Proposed Agricultural Crowdfunding Platform Development as an innovative solution for increasing agricultural productivity in Indonesia

A. Innovation Proposal

Develop a digital platform that functions as an online media to inform the existence of unproductive agricultural land to be processed into productive land in the form of an investment offer for agricultural projects so that it is expected to create crowdfunding capital that can increase land productivity and improve the economy of farmers and provide benefits for farmers the investor.

B. Business Rules

The proposed business rules in this digital innovation are:

- a. Investors can invest in more than 1 agricultural project in the crowdfunding platform

- b. The calculation of the projected profit value is carried out by a team of experts from the development of the crowdfunding platform
- c. Profit sharing is regulated by the crowdfunding platform developer

C. User

Based on the existing functions on the system, there are 3 types of application users:

1. Investors
Every person or business entity who wants to invest
2. Farmer
Every farmer or group of farmers who need financial assistance
3. Administrators
Individuals who are authorized by the crowdfunding platform developer to manage data on the system

D. Types of Investment Offers

There are 2 types of investment models offered:

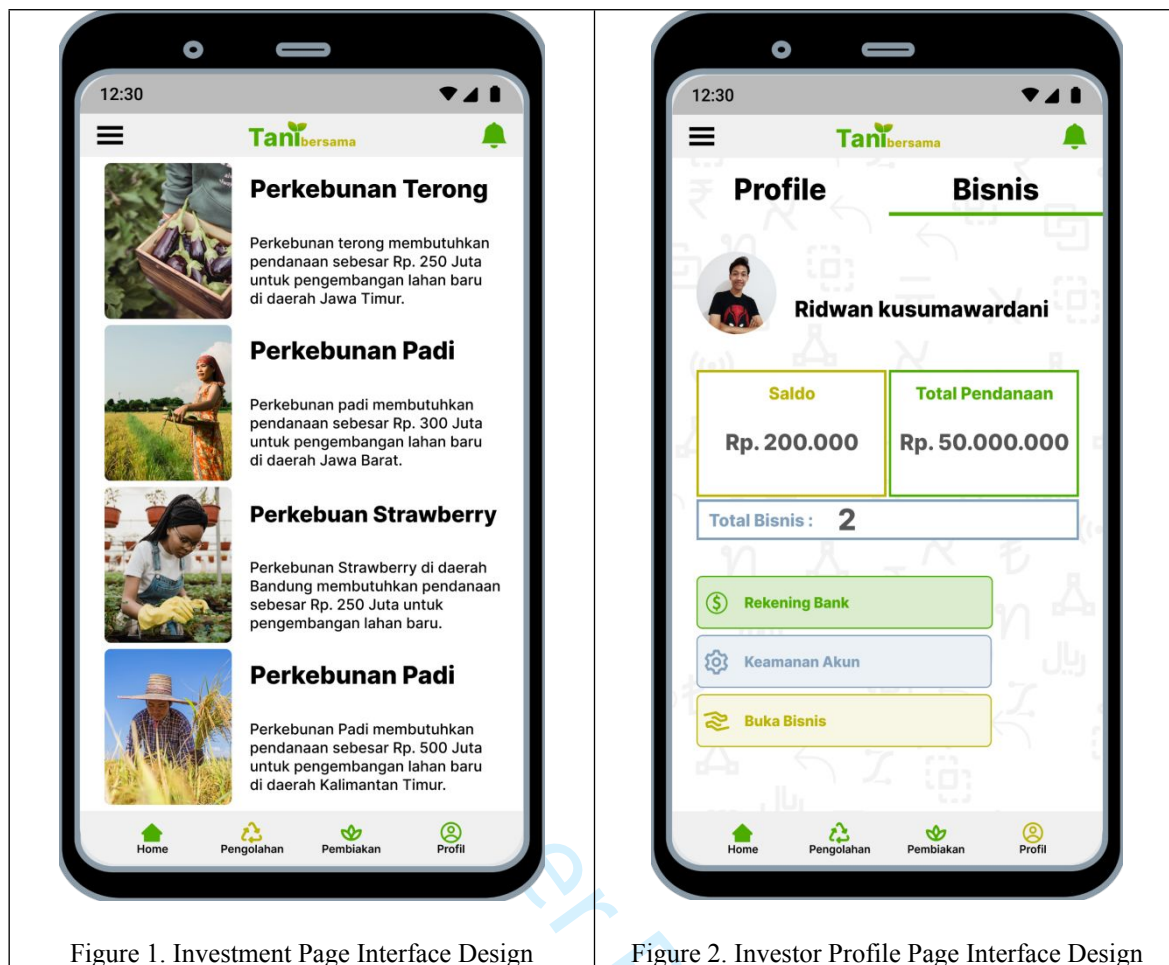
1. Short Term Investment
Short-term investment applies to agricultural commodities that are harvested within 6-12 months
2. Long Term Investment
Long-term investment applies to agricultural commodities that are harvested within a period of more than 1 year

E. Partner Engagement

Partners in the crowdfunding platform are farmer groups spread across the archipelago and the regional offices of the ministry of agriculture in every province in Indonesia can act as facilitators.

3.4. User Interface Prototype

The user interface is designed to make it easier for users to interact with the application, the prototype user interface in Figure 1 is an application interface design that is on the menu listing the variety of agricultural investments offered, containing information about the investment title, a brief description of the investment and information on the cost of the investment package offered. Figure 2 is an investor profile page interface design that contains information about the name of the investor, the balance held and the total funding that has been financed by the investor.



CONCLUSION

The challenge for agricultural development in Indonesia is to control the amount of unproductive land so that it can become productive again, by calculating the potential that can be achieved from the use of unproductive land and the benefits offered, the movement to produce agricultural land should be important to be carried out together, in this era of globalization. Today's digital transformation, Indonesia needs to pay attention to strengthening agriculture based on the use of digital technology infrastructure.

Access to capital for farmers who are obstacles should be created through a crowdfunding system that can be mutually beneficial between farmers and investors and there is a need for the involvement of various parties including the government and the private sector to make the digital transformation movement for agriculture in Indonesia successful.

ACKNOWLEDGEMENTS

This research is part of a research funded by Directorate General of Higher Education Ministry of Education and Culture of the Republic of Indonesia in 2020 with the Higher Education Cooperation Research Funding Scheme between Trilogi University and Sultan Ageng Tirtayasa University.

REFERENCES

- [1] Syuaib, M. F. (2016). Sustainable agriculture in Indonesia: Facts and challenges to keep growing in harmony with environment. *Agricultural Engineering International: CIGR Journal*, 18(2), 170-184.
- [2] Quincieu, E. (2015). "Summary of Indonesia Agriculture, Natural Resources and Environment Sector Assessment", Asian Development Bank Paper on Indonesia No.08.
- [3] Sadyohutomo, M. (2018). IOP Conf. Series: Earth and Environmental Science 202 012030 doi:10.1088/1755-1315/202/1/012030
- [4] Suryahadi, A., Suryadarma, D., & Sumarto, S. (2009). The effects of location and sectoral components of economic growth on poverty: Evidence from Indonesia, *Journal of Development Economics*, 89(1), 109-117.
- [5] Agricultural Data and Information Center. (2015). Agriculture Sector GDP Analysis in 2015, Ministry of Agriculture of Republic Indonesia.
- [6] Rusono, N. et al. (2013). *Preliminary Study of the National Medium Term Development Plan (RPJMN) Food and Agriculture Sector 2015-2019*. Directorate of Food and Agriculture Ministry of National Development Planning / National Development Planning Agency.
- [7] Anandita, D. A., Patria, D. Z. (2016). Agriculture Challenges: Decline of Farmers and Farmland Study from Indonesian Family Life Survey, *JIEP*, 16(1), 48-53.
- [8] Anonymous. (2016). Indonesia National Socio-Economic Survey 2016. Director of People's Welfare Statistics - Central Statistics Agency. Mikrodata.bps.go.id. <https://mikrodata.bps.go.id/mikrodata/index.php/catalog/769>
- [9] Dresner, S. (2014). *Crowdfunding: A Guide to Raising Capital on the Internet*, John Wiley & Sons, New York, NY.
- [10] Wahjono, S. I., Marina, A., & Widayat. (2015). *Islamic crowdfunding: alternative funding solution*, 1st WorldIslamic Social Science Congress (WISSC 2015), Putrajaya, pp. 1-12
- [11] Rossi, M. (2014). The New Ways to Raise Capital: An Exploratory Study of Crowdfunding, *International Journal of Financial Research*, 5(2), 8-18.
- [12] Law of the Republic of Indonesia Number 41 of 2009 concerning Protection of Sustainable Food Agriculture Land
- [13] Saiti, B., Afghan, M., & Noordin, N.H. (2018). Financing agricultural activities in Afghanistan: a proposed salam-based crowdfunding structure, *ISRA International Journal of Islamic Finance*, 10(1), 52-61, <https://doi.org/10.1108/IJIF-09-2017-0029>
- [14] Jazil, T. (2019). Islamic Financing Mechanism for Small Medium Enterprises in Agriculture Sector: A Proposed Model. *Jurnal islaminomics*, 9(1).
- [15] Mazure, G. (2017, April 27-28). *Perspectives of Crowdfunding as Innovative and Alternative Finance Platform in Latvia*, Proceedings International Conference on Economic Science for Rural Development, Jelgava.
- [16] Achsien, I. H., & Purnamasari, D. L. (2016). Islamic Crowd-funding as The Next Financial Innovation in Islamic Finance : Potential and Anticipated Regulation in Indonesia. *European Journal of Islamic Finance*, 5(5), 1–11.
- [17] Thaker, H. M. T., Khaliq, A., Sakaran, K.C., Asmy, M., & Thaker, M.T. (2020). A discourse on the potential of crowdfunding and Islamic finance in the agricultural sector of East Java, Indonesia. *Jurnal Ekonomi dan Keuangan Islam*, 6(1), 10-23. DOI: 10.20885/JEKI.vol6.iss1.art2
- [18] Filimonova, N.G., et al. (2018). Distinctions of the Crowdfunding Model in Agriculture, *Digest Finance*, 23(1), 98-107.

- 1
2
3 [19] Singh L. (2011). Accuracy of Web Survey Data: The State Of Research on Factual
4 Questions in Surveys, *Information Management and Business Review*, 3(2). 48-56.
5 [20] Forza, C. (2002). Survey research in operations management: a process-based
6 perspective, *International Journal of Operations & Production Management*, 22(2).
7 152-19.
8 [21] Ambarsari, Wiwik, Ismadi, V. D., & Setiadi, A. (2014). Analisis pendapatan dan
9 profitabilitas usaha tani padi di kabupaten indramayu. *Jurnal Agri Wiralodra*, 6(2), 19-
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For Peer Review

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SULAWESI TENGAH	441.384	377.286	332.88
SULAWESI SELATAN	101.911	105.435	96.108
SULAWESI TENGGARA	222.909	227.712	206.502
GORONTALO	49.981	50.088	50.014
SULAWESI BARAT	54.288	60.983	60.565
MALUKU	697.902	766.555	919.942
MALUKU UTARA	20.591	20.754	13.525
PAPUA BARAT	2.280.872	1.019.858	2.091.939
PAPUA	1.378.042	1.385.532	1.384.185
JUMLAH	12.168.012	10.777.200	11.771.388

Area of Unproductive Agricultural Land in Hectares

138x226mm (72 x 72 DPI)

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Table 2. Area of Agricultural Land in Indonesia, 2018 - 2019

Land Type	Year		Growth (%)
	2018	2019	2019 over 2018
Wetland	7.105.145	10.677.887.15	43.06
Garden	11.696.845	12.393.092	5.95
Shifting Cultivation	5.256.324	5.188.658	-1.29
Temporarily Unused Land	10.777.200	11.771.388	9.22

Area of Agricultural Land in Indonesia, 2018 - 2019

145x51mm (72 x 72 DPI)

Table 3. Rice Farming Area and Productivity Per Province in Indonesia

Province	Land area (ha)	Productivity (kg/ha)	Production (ton)
	2019	2019	2019
ACEH	310.012.46	55.30	1.714.437.60
SUMATERA UTARA	413.141.24	50.32	2.078.901.59
SUMATERA BARAT	311.671.23	47.58	1.482.996.01
RIAU	63.142.04	36.56	230.873.97
JAMBI	69.536.06	44.57	309.932.68
SUMATERA SELATAN	539.316.52	48.27	2.603.396.24
BENGKULU	64.406.86	46.03	296.472.07
LAMPUNG	464.103.42	46.63	2.164.089.33
KEP. BANGKA BELITUNG	17.087.81	28.56	48.805.68
KEP. RIAU	356.27	32.30	1.150.80
DKI JAKARTA	622.59	53.96	3.359.31
JAWA BARAT	1.578.835.70	57.54	9.084.957.22
JAWA TENGAH	1.678.479.21	57.53	9.655.653.98
DI YOGYAKARTA	111.477.36	47.86	533.477.40
JAWA TIMUR	1.702.426.36	56.28	9.580.933.88
BANTEN	303.731.80	48.41	1.470.503.35
BALI	95.319.34	60.78	579.320.53
NUSA TENGGARA BARAT	281.666.04	49.78	1.402.182.39
NUSA TENGGARA TIMUR	198.867.41	40.82	811.724.18
KALIMANTAN BARAT	290.048.44	29.23	847.875.13
KALIMANTAN TENGAH	146.144.51	30.35	443.561.33
KALIMANTAN SELATAN	356.245.95	37.69	1.342.861.82
KALIMANTAN TIMUR	69.707.75	36.41	253.818.37
KALIMANTAN UTARA	10.294.70	32.40	33.357.19
SULAWESI UTARA	62.020.39	44.79	277.776.31
SULAWESI TENGAH	186.100.44	45.40	844.904.30
SULAWESI SELATAN	1.010.188.75	50.03	5.054.166.96
SULAWESI TENGGARA	132.343.86	39.27	519.706.93
GORONTALO	49.009.95	47.18	231.211.11
SULAWESI BARAT	62.581.47	47.96	300.142.22
MALUKU	25/976.85	37.82	98.254.75
MALUKU UTARA	11.700.50	32.43	37.945.64
PAPUA BARAT	7.192.15	41.63	29.943.56
PAPUA	54.131.72	43.48	235.339.51
TOTAL	10.677.887.15	51.14	54.604.033.34

Rice Farming Area and Productivity Per Province in Indonesia

167x257mm (72 x 72 DPI)

Table 4. Potential Agricultural Income in Tons in 2019

Province	Area of Unproductive Land (Ha)		Income Potential (ton)	
	2019		2019	
ACEH	299.701		1.498.505	
SUMATERA UTARA	310.973		1.554.865	
SUMATERA BARAT	200.134		1.000.670	
RIAU	513.277		2.566.385	
JAMBI	255.851		1.279.255	
SUMATERA SELATAN	474.587		2.372.935	
BENGKULU	86.888		434.440	
LAMPUNG	67.93		339.650	
KEP. BANGKA				
BELITUNG	54.39		271.950	
KEP. RIAU	86.945		434.725	
DKI JAKARTA	77		385	
JAWA BARAT	13.730		68.650	
JAWA TENGAH	7.567		37.835	
DI YOGYAKARTA	1.766		8.830	
JAWA TIMUR	20.812		104.060	
BANTEN	5.345		26.725	
BALI	447		2.235	
NUSA TENGGARA BARAT	48.844		244.220	
NUSA TENGGARA TIMUR	770.579		3.852.895	
KALIMANTAN BARAT	945.192		4.725.960	
KALIMANTAN TENGAH	1.487.389		7.436.945	
KALIMANTAN SELATAN	133.999		669.995	
KALIMANTAN TIMUR	516.673		2.583.365	
KALIMANTAN UTARA	255.154		1.275.770	
SULAWESI UTARA	57.519		287.595	
SULAWESI TENGAH	332.88		1.664.4	
SULAWESI SELATAN	96.108		480.54	
SULAWESI TENGGARA	206.502		1.032.510	
GORONTALO	50.014		250.07	
SULAWESI BARAT	60.565		302.825	
MALUKU	919.942		4.599.71	
MALUKU UTARA	13.525		67.625	
PAPUA BARAT	2.091.939		10.459.695	
PAPUA	1.384.185		6.920.925	
TOTAL	11.771.388		24.852.077.020	

Potential Agricultural Income in Tons in 2019

148x250mm (72 x 72 DPI)



Figure 1. Investment Page Interface Design

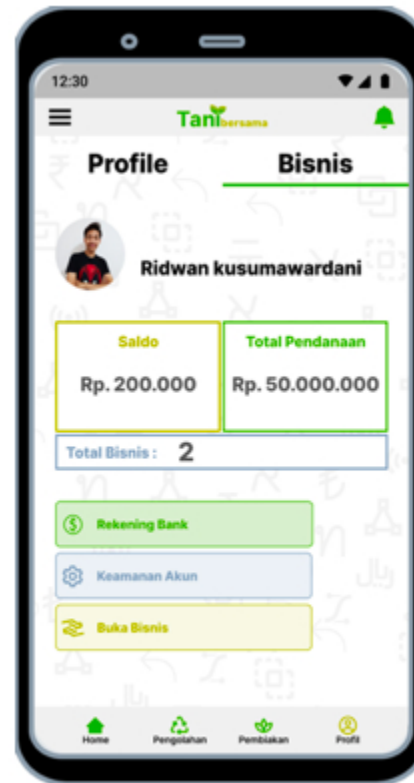


Figure 2. Investor Profile Page Interface Design

Figure 1. Investment Page Interface Design and Figure 2. Investor Profile Page Interface Design

176x152mm (72 x 72 DPI)