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Agritech Development as Alternative Investment in The Agricultural Sector

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ABSTRACT

The recession that occurred in Indonesia at the begining of the Covid-19 pandemic resulted in a decrease in production levels and limited people's purchasing power. Social restriction policy makes people did not do much activity outdoor and take advantage of the convenience of e-commerce to meet their daily needs. The rapid development of technology has encouraged the emergence of digital businesses such as start-ups. In the agricultural business, start-up entrepreneurs bridge three elements, i.e., capital, market, and cultivation ability. Meanwhile the main external factor determining the movement of start-ups is investment or funding. Descriptive analysis was conducted on 15 agribusiness start-ups (agritechs) in Java and Bali to find out how the impact of investment on the development of start-ups. The results show that investment in agritech is still relatively low when compared to start-ups in other sectors, such as transportation and finance. This is because the preparation period for agritech is quite long so that investors' decisions to make funding are also hampered.

Keywords: Agribusiness Start-Up; Agritech; Funding; Investment

INTRODUCTION

The impact of covid-19 pandemic has caused a massive economic contraction globally, including Indonesia. Even Indonesia experienced a recession in 2020. Significant impact is felt by tourism, trade, and industry, including micro, small, and medium enterprises (MSMEs). The declining level of production and purchasing power is a direct impact felt by the community (Hardilawati, 2020).

The government on the other hand issued a policy to suppress the spread of covid-19, namely the policy of social restriction policy. This social restriction policy was carried out in several stages during 2020 to 2021. The economic contraction occurred because of social restriction policies implemented by the central and local governments. The trend of population mobility has decreased drastically, so that people do more activities at home. Study and work from home, shop from home, and do other activities that are generally carried out outside the home (Cahyadi & Prima, 2022).

During the covid-19 pandemic, sales of goods experienced a significant decrease in turnover because consumers had limitations to visit stores or shop in person (Hardilawati, 2020). In limited conditions, various efforts and opportunities arise that are utilized by business actors. One of the efforts made by business leaders is to take advantage of digital developments and start switching businesses to online businesses, for example in collaboration with e-commerce. Sales through e-commerce allow business actors and consumers to

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make transactions without meeting in person, thus removing the limitations that exist during the covid-19 pandemic (Zebua & Sunaryanto, 2021).

Sales through e-commerce are carried out both by small businesses and utilized by start-ups that have existed in recent years. Start-ups engaged in agribusiness have received a lot of attention during the pandemic because most people in the community feels the benefits of agribusiness start-ups. Product offerings accompanied by innovative services become the initial capital of agribusiness start-ups in facing uncertainty situations. In addition to benefiting consumers, the use of this technology also increases farmers' incomes (Ramos & Pedroso, 2021).

Information at the farmer level can be leveraged to create digital markets. An example of agritech in developing countries is the Digital Green Loop in India. Through agritech, Indian farmers connect to local entrepreneurs and transporters to distribute their products (Hinson et al., 2019). On the other side, agritech are also quite attractive to consumers because in addition to providing basic ingredients, they also provide daily necessities that available in traditional markets or supermarkets.

Financial technology or commonly called fintech is an innovation that is created through technological developments. The existence of financial intermediation services through mobile phones connected via the internet also makes it very easy for consumers and producers to make transactions. The integration of fintech with green technology in agriculture currently shows enormous potential (Hinson et al., 2019). Based on this, investment in agribusiness start-ups or agritech really needs to be encouraged and realized.

According to Aras et al. (2021), the use of technology through internet media is used as a product marketing strategy by start-ups. Information about products can be shared through social media and Google ads. Given that almost everyone today has a smartphone, this information will easily spread and interest consumers. This marketing strategy is also carried out at a cost that can be said to be affordable.

In addition to marketing, the success of start-ups also come from various internal and external factors. There are four main internal factors that can affect the success of a start-up, including technical competence which is the ability to prepare business concepts and systems they used. The second internal factor is marketing competence, which is the ability to determine the right target market and the strategies to be carried out in marketing. Then, financial competence, the ability to manage finances, purchases, book sales, to financial statements. Finally, human relations which is a competence in relationship development, both between one sindividual in the company to the consumer (Sitepu, 2017).

Start-up companies will not be separated from the funding received from investors. Funding or investment is the main external factor that determines whether a start-up will survive for the long term and be sustainable. Utama (2013) states that macro-investment can spur and increase development and economic growth. On a micro scale, investment can support a company's growth. Start-ups that are the company's innovations today with the use of technology and information will indirectly make investors interested in funding. Funding is also usually re-done if the start-up shows good performance

Table 1
Agritech in Indonesia

Start-Up Name	Business Type	Year of Establishment
Tanihub	Marketing distribution	2012
iGrow	Capitalization, marketing, and cultivation	2014
Eragano	Capital and marketing	2015
Limakilo/ Warung Pintar	Marketing distribution	2015
Pantau Harga	Product pricing information	2015
Kecipir	Marketing distribution	2016
Tanijoy	Capitalization and marketing	2016
Pandawa Putra	Agricultural production means	2017
Sayurbox	Marketing distribution	2017

Source: https://berdesa.com, 2020

According to data from the startupranking website, Indonesia currently has 2,438 start-ups in various fields. Starting from education, finance, investment, property, health, agribusiness, and so on. The growth of start-ups in Indonesia can be said to be rapid and diverse. Unfortunately, there are not too many start-ups in the agribusiness sector in Indonesia. It is recorded that there are only 54 start-ups in Indonesia that are currently engaged in agribusiness (Pangarkar & Vandenberg, 2022). Table 1 above shows nine agritech that are pioneers in Indonesia.

The purpose of this study is to descriptively analyze the effect of investment on the success of agribusiness start-ups. Whilecurrently research on agritech is mostly seen from the user side, research that discusses investment is still very limited. On the other hand, investment is the main external factor for start-ups to form, move, and develop. To fill the gap, this study was conducted.

RESEARCH METHODOLOGY

This research is a qualitative research that analyzes the main external factors in start-ups, namely investment. A descriptive analysis will be carried out on how the investment impacts the success of agritech. Start-up success itself is measured based on the company's ability to achieve turnover or sales. The data used is primary data with data collection techniques carried out through distributing questionnaires. The research questionnaire contains the characteristics of agritech companies and questions regarding investment and turnover received by the company per month. In addition to the questionnaire, in-depth interviews were also conducted to complete the required data. Questionnaires and in-depth interviews were distributed to 15 agritech companies in Java and Bali.

RESULTS AND DISCUSSIONS

Smallholder farmers have played a major role in reducing hunger and malnutrition, but unfortunately, they are also experiencing barriers to making profit. The challenges faced by farmers are mostly regarding human resources and limitations to infrastructure, markets, and technology. Even today smallholder farmers are becoming more powerless because of risks and challenges to climate change, health, prices, finance, funding. Tsurayya et al. (2022) conducted research on the determinants of agritech success in Indonesia which is closely related to this research. The results of this study indicate that strategies to increase smallholder farmers including improving the financial

health of farmers, increasing access to prices for farmers' products to make them better and more stable, and increasing agricultural profitability.

Currently, the industrial sector contributes the largest contribution to Indonesia's gross domestic product (GDP). In the third quarter of 2022, the industrial sector has contributed about 17.88% which is dominated by the non-oil and gas sector, especially the food and beverage industry (F&B industry). Followed by the agriculture, forestry, and fisheries sectors where the agricultural sub-sector contributed the highest, namely 9.76% (Badan Pusat Statistik, 2022).

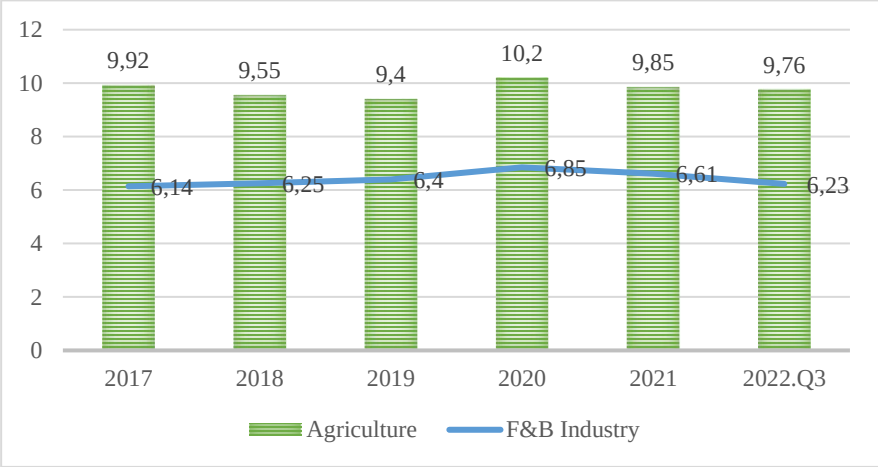

Figure 1
Agriculture and F&B Industry Sub-sector in 2017 – 2022 (Badan Pusat Statistik, 2022)

The agricultural sub-sector is upstream, and the sub-sector of the food and beverage industry is downstream. Both of which are closely related and are the pillars of the current Indonesian economy. These two sub-sectors survived and even their contribution had increased during the covid-19 pandemic. During 2020, both sub-sectors experienced a significant increase. even though during 2020, Indonesia experienced an economic crisis up to a recession. This proves that the potential of these two sub-sectors is very high for the Indonesian economy.

Agritech could bridge these two sub-sectors so that their development continues to show an increasing trend. Digital start-ups in agriculture or better known as agritech bring hope to the agricultural industry. These mechanisms and business models provide an opportunity for efficiency in terms of production to distribution. Agritechs are engaged in various fields that bridge between agriculture and the food and beverage industry, such as capitalization and meeting the needs of farmers through technology, crop care, and distribution of agricultural products to producers and consumers (Baihaqi, 2021).

Entrepreneurship in agriculture should be explored more deeply because it is a contributor to the global food supply chain. The concept of entrepreneurship is the process of identifying new opportunities and markets by developing various innovative ideas and using the right resources to create a business. This type of entrepreneurship in agriculture will certainly create jobs, increase efficiency in the energy sector, conserve and protect natural resources, and minimize environmental degradation. Indonesia, like other developing countries, faces quite high unemployment, especially in rural areas. The development of entrepreneurship in the agricultural sector is

expected to reduce unemployment in these rural areas (Saghaian et al., 2022).

According to Windari et al. (2021), agritech currently play an important role in the economy, farmers, and society at large. However, on the other hand, agritechs have not developed much like start-ups in other sectors. The sustainability of agritech is determined by the investment received by the company. Investment is a major determinant in the success of a start-up. No matter how good the internal factors of the start-up company are if there is no funding from investors, the start-up company is unable to perform its functions.

Investment or funding is a fundraising process carried out by the owner of a start-up company to potential investors. The funding process is carried out by promoting the company, especially what innovations the start-up company will develop. Start-ups will be easy to get funding if they have strong appeal and competent internal factors. Finding investors and getting funding in start-ups is very important to expand the business (Aras et al., 2021). Unfortunately, despite the start-up dependence on funding is very high, venture capital is not a common source (Vandenberg et al., 2020).

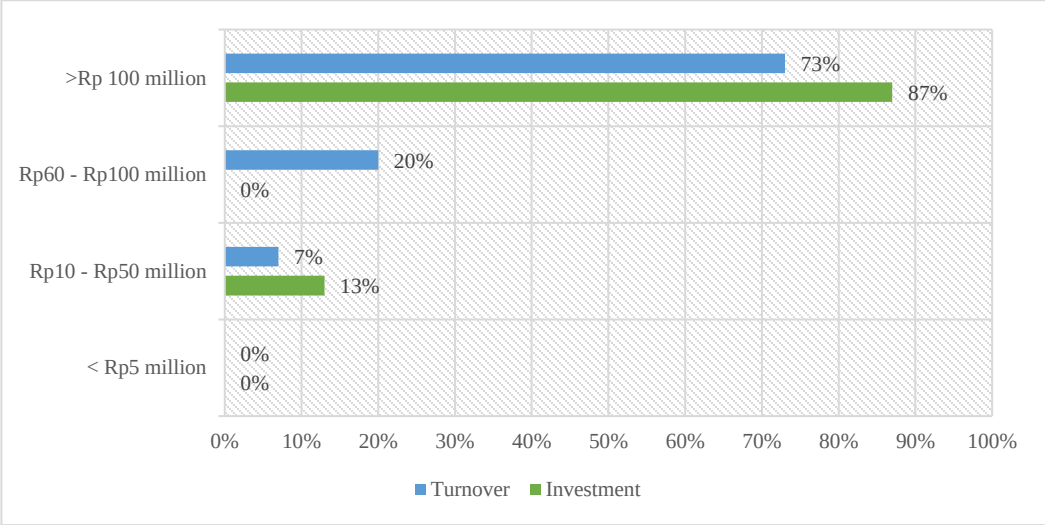

Figure 2
Average Investment and Turnover Received per Month (Data Processed, 2022)

Figure 2 above shows the average investment and turnover received per month by agribusiness start-ups. Based on a questionnaire given to 15 respondents who are agribusiness start-up business actors, as many as 2 respondents or 13% received an average investment per month of IDR 10,000,000 to IDR 50,000,000. While the remaining 13 respondents or 87% received investments of more than IDR 100,000,000 per month. This shows that investor confidence in agritechs in Indonesia is very high. This high investor confidence is indicated to be able to increase production starting from the farmer level. Unfortunately, as research conducted by Hinson et al. (2019) in Africa, most of those who take advantage of investment in agritech are in rural areas. Even so, in rural areas, until now there is still a lack of resources, inadequate networks, infrastructure that still needs to be improved, and limited adoption of fintech by rural communities.

The turnover received by agritech companies can be said to be high. No agritech company receives a turnover of less

than IDR 5,000,000 per month. As many as 1 agritech company or 7% of respondents received an average of IDR 10,000,000 to IDR 50,000,000 turnover in a month. Meanwhile, as many as 3 agritech companies or 20% receive an average of IDR 60,000,000 to IDR 100,000,000 turnover per month. The remaining 11 agritech companies or 73% receive more than IDR 100,000,000 turnover per month. Start-up companies are already included in the category of medium-sized businesses. Turnover with a range of IDR 10,000,000 to IDR 100,000,000 is categorized as not too high. Based on research conducted by Zebua & Sunaryanto (2021), agricultural businesses before the pandemic were on average able to receive a turnover of up to IDR 400,000,000 per month. However, when the pandemic hit, turnover decreased by half, to only IDR 200,000,000.

The Asian Development Bank conducted a study on the start-up ecosystem in Singapore which is then expected to be a lesson for neighboring countries, including Indonesia. Based on this study, Indonesia has enormous potential for the development of start-ups, especially agritech, because the number of consumers who will take advantage of e-commerce is expected to increase from 11 million to 42 million consumers. Unfortunately, since 2019 until now, Indonesia is ranked 73rd on the Ease of Doing Business Index conducted by the World Bank. Complicated bureaucracy and inequality in urban and rural infrastructure are the main factors of why investors are still less interested in agritechs in Indonesia (Pangarkar & Vandenberg, 2022).

Agritechs generally require a long period of preparation time. This is one of the reasons why agritechs are still not in demand for development by business actors. From the investor side, this is also a reason why investments cannot be made directly with a fantastic amount of funding (Laugerette & Stöckel, 2016). The long preparation period at agribusiness start-ups is due to the large number of stakeholders related to each other. In addition, the time it takes for farmers to harvest is also not short. In contrast to start-ups in the transportation sector, for example. Quick and massive recruitment that can be done, also consumer needs can be met immediately allows start-ups in the transportation sector to develop and even become unicorns in a relatively fast period. According to the study conducted by Asian Development Bank, apparently greentech and agritech also require long-term support through design, testing, prototyping, and certification stages (Vandenberg et al., 2020).

Based on the in-depth interviews conducted, the agritech work system in Indonesia is mostly the same. Figure 3 shows the work system of one of the agritech pioneers in Indonesia, namely TaniHub. The TaniHub work system is a collaboration between various stakeholders, including investors, farmers, and consumers. Investments, both from financial institutions and investors, are given to TaniHub as a mediator. Then TaniHub provides investment funds to farmers which are then used by farmers in producing agricultural products. The produce is then bought by TaniHub, then TaniHub distributes the agricultural produce to consumers. Distribution is carried out through digital transactions, both through applications and through e-commerce. At the end of the contract, TaniHub will provide investment interest to investors.

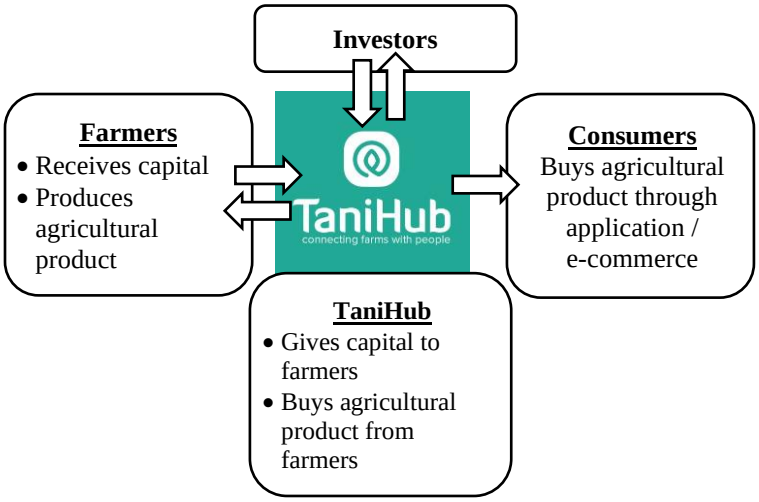

Figure 3
TaniHub Work System

Agritechs have great potential if they merge with other start-up companies. The strategy carried out by Gojek and Tokopedia is something that is enviable for other start-ups, including agritechs. Gojek and Tokopedia (GoTo) who merged and decided to offer their shares to the public or IPO (initial public offering) on the Indonesia Stock Exchange (IDX) is a bold move from an Indonesian start-up. GoTo released 40.61 billion shares, representing 3.43% of its issued and paid-up capital. The price set at the time of the IPO was IDR 338 per share. The IPO, which has also been carried out before by Bukalapak.com opens up opportunities for other start-ups to think about ways to fund besides waiting for investors (Saumi, 2022).

Until now, Indonesian agritechs have not broken through the unicorn level or even decacorns. Indonesia currently only has four start-ups that penetrate unicorns, namely Bukalapak, Tokopedia, Traveloka, and OVO. Meanwhile, Gojek managed to break through the decacorn strata with a valuation above US$ 10 billion (Ministry of Information, 2022). Agritechs in the future are expected to get greater funding, in addition to funding from foreign investors, mainly expected from domestic investors, for example through IPOs.

To invite investors to be interested in investing in agritech, what agritech must has to do is develop its business and overcome challenges in changing business models that regularly occur. The use of temporal Community of Practice is one suitable solution in Indonesia. There are studies that have done this in the UK and Vietnam with the aim of getting short-term and long-term benefits. This Community of Practice can be carried out not only by fellow agritechs, but also by several different start-ups to create new service partnerships (Brown et al., 2021).

Based on a study conducted by (Brown et al., 2021), the agricultural sector in Vietnam and UK has similar characteristics to the agricultural sector in Indonesia. Agriculture and agribusiness are the main pillars of Vietnam's economy by contributing 14.85% of the total GDP and absorbing as much as 39.45% of the workforce in 2020. The development of agritech is an innovation that is expected to maintain food security in Vietnam. To achieve this, agritechs in Vietnam have to overcome various challenges, such as climate change

and weather, lack of human resources in terms of business training, lack of funding, and slow regulatory developments. These characteristics are quite similar to what happened in Indonesia.

Community of practice in general is a meeting of a group of people with one concern and the same goal and is held regularly to find a solution to solve a problem. This community is different from project teams or other inter-organizational teams, because in those communities everyone gets specific tasks that must be done and completed. Meanwhile the success of community of practice is based on the quantity and quality of the exchange of knowledge, experience, and skills. Therefore, this is very suitable for start-ups in Indonesia. In fact, not only fellow agribusiness start-ups but also start-ups from another sector. Thus, they can develop and they will be able to carry out profitable collaborations.

CONCLUSIONS

Agritechs have great potential because they are able to help people survive during the economic crisis that occurred during the covid-19 pandemic. Until now, agritechs are very beneficial for the community. The sustainability of start-ups cannot be separated from external factors, namely investment. Investment or funding determines the direction of the start-up company to determine its sustainability. Currently, agritech companies in Indonesia have not been able to compete with start-ups from other fields, such as transportation and finance. Although investment in agritech is quite high, there are no agritech in Indonesia that are categorized as unicorns. As an effort to increase funding, agritech can merge with other start-up and conduct an IPO so that funding comes from various types of investors. Another recommendation given to agritech and other start-ups in Indonesia is they should do temporal community of practice for knowledge exchange.

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