Participation of beef cattle farmers and the effect on production

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Abstract: Increasing food production can be done through increasing productivity and increasing business scale, both of them need an additional cost. Meanwhile, capital for small-scale farmers is relatively limited, so financial support is needed. At present, the Government financing support in the form of loans program is the People's Business Credit (KUR). The objective of the study is to analyze the role of KUR in beef cattle business and the effect on increasing livestock production. The research was conducted in 2020 in Central Lampung District with a survey method of 60 farmer respondents. The study revealed that at the national level, the participation rate of beef cattle farmers in the use of KUR was only 2.71%, and in Lampung Province, it reached 7.72%. Beef cattle farmers in the study locations used KUR funds for on-farm farming. Most of the farmers (84.4%) used the funds to purchase brood stock. The KUR program has an impact on increasing the productivity of cattle for fattening 0.2 kg live weight/head/day, increasing the scale of cattle breeding, and fattening two cows and eight cows respectively per farmer. The impact of KUR on enhancing production due to increased productivity and business scale is significantly determined by the level of farmer participation in the use of KUR. It is needed to increase farmer participation in the use of KUR and the use of KUR funds to adopt recommended technology. So that, KUR has impact on increasing livestock production.

1. Introduction
To increase food production, it is necessary to increase productivity and expand planting area. However, both efforts require additional costs. Currently, not all of the technologies that have been introduced have been adopted due to cost constraints, so that the resulting productivity is not as expected. Likewise, the economic scale of business has not been achieved due to the narrow ownership of land and livestock causing farming that has not yet reached the efficient stage.

Currently, the government provides a source of financing in the form of program credit, namely People's Business Credit (KUR). This credit can be used to finance all productive businesses including agriculture that is feasible but not yet bankable [1]. According to the Coordinating Ministry for Economic Affairs No. 8/2019, regarding Guidelines for the Implementation of People's Business Credit, there are four groups of KUR, namely: Micro KUR, KUR for the Placement of Indonesian Workers, Small KUR and Special KUR. In the Agricultural Sector, there are three types of KUR, namely: Micro KUR, Small KUR, and Special KUR [2]. The government made policy changes related to the KUR Program with the aim of further increasing the accessibility of KUR users to encourage trade and production activities of MSMEs in Indonesia [3]. Since January 2020, the interest rate on KUR loans has been reduced from 7% to 6% per annum. The credit ceiling for the agricultural sector was raised

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from IDR 25.3 trillion in 2019 to IDR 50 trillion in 2020. The policy is intended to increase farmers’ access to KUR, so that agricultural production is expected to increase.

Credit has a positive and significant effect on increasing farmers’ income [4]. Increasing access and allocation of credit from banks to the agricultural sector has implications for increasing farmers’ income [5,6]. Based on this, the monetary authority and financial services need to consider issuing policies to make it easier for farmers and agricultural entrepreneurs to be able to access capital easily and quickly.

The problem with program credit is that the amount of program credit disbursement in the past for the agricultural sector was relatively low compared to the target that had been set. Even in many cases, credit defaults were also found. In addition, participation of credit is still relatively low. In the case of program credit schemes for the agricultural sector, non-performing loans and program credit funds prepared by the government were absorbed below the target ceiling. The previous study in Kendal District, Central Java Province revealed that the implementation of program credit has not shown results as expected with indications of the absorption of the Food and Energy Security Credit [7]. Also, the interest subsidy budget which is far below the potential for distribution and the ceiling provided by the implementing bank is much higher than which can be distributed.

The previous research in Samarinda found that the performance of business loans at channeling banks from 2012 – 2014 decreased due to loans [8]. The causes of bad loans come from two parties, namely: (1) banks need the ability to maximize credit analysis from customer predictions; the credit analysis party must be able to determine whether the amount of credit proposed by the customer is in accordance with his business needs and the customer's ability to pay, otherwise the potential for bad credit will be high; (2) the customer or the customer intentionally has an intention to delay or not pay the obligation, or the customer is willing to pay but is unable to because his business is losing money. Loss of business can be caused by: crop failure due to season and disease, mistakes in choosing cattle breeds in the case of Cattle Breeding Business Credit (KUPS), and fluctuations in input and output prices [9].

Beef cattle are one of the livestock commodities that are mostly cultivated by people in rural areas. Beef cattle business is carried out in order to meet the needs of beef for the community. Most people raise beef cattle on a small scale, especially in rural areas, beef cattle business is only an additional effort to meet family needs. Livestock businesses require large capital, especially for feed and seeds. It is generally difficult for smallholder farmers to meet these large costs mainly because of capital difficulties [10,11]. Livestock business which is generally carried out by small farmers in rural areas requires a KUR as a financing scheme with a large funding and easily accessible. With the ease of access to financing, the level of beef cattle farmers’ participation in KUR will increase, so that it has an impact on increasing business scale and profits.

Based on this background, the objective of this paper is to analyze the role of KUR in beef cattle business. The discussion focused on the level of participation of farmers and ranchers in utilizing KUR, the impact of KUR on beef cattle production and farmer income.

2. Materials and methods

2.1 Materials

The study was conducted in Central Lampung District, Lampung Province in 2020 with the following considerations: (i) This province is the high KUR’s debtors for cattle, and (ii) Aspects of culture, banking services and local government services. Total number of respondents are 60 consist of two types of respondents, namely debtors (30) and non-debtors (30). The determination of the number of respondents is based on the proportional representation aspect by considering the limitations of research personnel and time.

This paper used primary data that collected from policy makers and staff, banks/distributors at the central and regional levels, related agencies in the regions, farmer group administrators, and farmers through face to face interview used questionnaire. Secondary data and information were collected from the Ministry of Agriculture, Ministry of Finance and BPS.
2.2 Methods
The analysis method used in this study was qualitative and quantitative descriptive presented in table, pictures with a simple descriptive statistic. Descriptive statistic had a broadband aspect to explain the existing condition in the qualitative research. The analysis focused on the level of participation of farmers and beef cattle farmers’ in utilizing KUR, the impact of KUR on beef cattle production and farmer income. The recommendation for the development of KUR was obtained from synthesis of the result and discussion.

3. Results and discussion
3.1. Participation rate of farmers and beef cattle farmers
The Coordinating Ministry for Economic Affairs Number 8/2019 concerning Guidelines for the Implementation of People’s Business Credit, in Article 16 Paragraph (2) it is stated that the distribution of KUR is prioritized in the production sector including sectors that increase the number of goods and/or services, including the agricultural sector which includes hunting and forestry. In 2019 debtor data and KUR distribution in the agricultural, hunting, and forestry sectors, were dominated by the agricultural sector, namely 99.5% for debtors and 99.3% for credit scores. This means that the agricultural, hunting and forestry KUR sectors can be fully represented by the agricultural sector which is the responsibility of the Ministry of Agriculture.

Since the government set the production sector KUR target in 2017, the agricultural sector KUR which is part of the production sector has increased both the number of debtors and the value of credit realization. The average share of the agricultural sector to the production sector during the 2017-2019 period was 48%. However, the growth in the number of debtors and the growth in credit values during the three years decreased, including the large share of the agricultural sector to the production sector.

Nationally, the level of participation of farmer households (FHH) in using KUR is still low. The participation of agricultural KUR farmers (the ratio of farmers using KUR to RTP) in 2018 and 2019 is still considered low, namely 4.99% and 5.23%, respectively. Rice farmers, vegetables including shallots, sugar cane, and beef cattle farmers throughout Indonesia who utilize KUR are still relatively low (Table 1). Among the four groups of farmers, the level of participation of vegetable farmers including shallot farmers in utilizing KUR is relatively high at 15.75%. The participation of sugarcane farmers KUR is 7.31%, beef cattle is 2.71% and rice farmers is only 2.57%.

Table 1. Participation rate of FHH by commodity on KUR utilization in Indonesia, 2019.

| No | Commodity  | Number of FHH in Indonesia 2018<sup>a)</sup> | Debtor KUR 2019<sup>b)</sup> | Participation rate of KUR (%)<sup>c)</sup> |
|----|------------|---------------------------------------------|-----------------------------|----------------------------------------|
| 1  | Rice paddy | 12,390,267                                  | 318,571                     | 2.57                                   |
| 2  | Shallot    | 297,788                                     | 46,908<sup>c)</sup>         | 15.75                                  |
| 3  | Sugar cane | 224,458                                     | 16,398                      | 7.31                                   |
| 4  | Beef cattle| 4,662,910                                   | 126,585                     | 2.71                                   |

<sup>a)</sup> BPS (2019); <sup>b)</sup> SKIP, (2019) [processed]; <sup>c)</sup> vegetable include shallot

This information can be interpreted in two different ways. First, efforts to encourage farmers to increase their participation through socialization, ease of requirements and breakthrough policies are still not optimal. Second, farmers who need KUR financing are relatively small because they already have capital from their own business and there is a subsidy program for the provision of production facilities that support farmers' businesses. Based on the previous results of research, this low participation is due to the first cause [12].

In the micro scale, the level of participation of beef cattle farmers in Lampung Province on KUR is small. Farmers who use KUR in Lampung Province are only 0.32% of the total farmer households nationally. The participation rate of beef cattle farmers to KUR in Lampung Province is 7.72%. For the district level, the participation of beef cattle farmers in Central Lampung District is 5.11%. This figure shows that the KUR funds provided by the government through KUR distributors are relatively not
widely used by beef cattle breeders in Central Lampung District. This does not mean that other breeders do not need funds, some farmers still use funds from other sources, such as rural banks, production kiosks, traders and other parties.

The KUR distributor, in this case the bank, who often prioritizes prudence, causes the low absorption of KUR by the community and the low access to capital for the community. This prudence is due to the adverse selection problem in the credit market. The adverse selection problem arises when lenders cannot clearly distinguish which borrowers have high and low default risks [13]. One solution to increase access to capital for the community is to involve Microfinance Institutions (MFIs) because these institutions are close and know the character of prospective debtors, so that risk can be minimized. For the use of KUR in the agricultural sector, the involvement of relevant agencies in identifying potential debtors can also increase farmers' access to KUR.

3.2. Impact of KUR on beef cattle production
As one of the production inputs, increasing the amount of capital that comes from the realization of KUR funds will increase food production whose farming businesses are financed from KUR. This increase can be caused by the use of KUR funds to optimize the use of inputs such as seeds/seedlings, fertilizers/feeds, pesticides/medicines to increase productivity and reduce yield losses. Apart from being used for farm production costs, the use of KUR funds can also be used to expand business scale. In the livestock business, KUR funds are used to increase the scale of business by cultivating more cattle.

The increase in beef cattle production is not only influenced by farming financing from KUR. Many farmers use financing from other sources. In addition, the increase in production is not only influenced by financing, but there are many other determining factors. Figure 1 below tries to compare beef cattle production data and KUR realization nationally. Based on the figure, the production of beef cattle represented by the population seems to have a consistent relationship with the realization of the KUR for beef cattle.

In the cattle breeding business, KUR funds are used for on-farm farming, other businesses and household consumption. KUR funds are also used by beef cattle farmers for consumption (21.9%), non-agricultural businesses (9.4%), and off-farm farming (3.1%). At the research location, most of the farmers used KUR funds for on-farm farming to purchase “young cows” those who were pregnant to increase their business scale (84.4%), and a small number of farmers used KUR funds to purchase production inputs (21.9%). There are also farmers who use part of the KUR funds to repair cowsheds. BRI as the distributor of KUR for farmers in Central Lampung provides flexibility in the use of KUR. KUR funds are allowed to be used as a "buffer" other than for livestock production purposes, which can be used for temporary bailouts. Farmers can use KUR money for feed costs or other daily needs, for example to marry off their children, so that their cows are not sold for these purposes because it is not yet time for them to be sold. The results showed that there were 21.9% of respondents who used KUR funds for consumption needs.
Figure 1. Relationship between KUR realization for beef cattle business and beef cattle population in Indonesia, 2016-2019.

3.3. Impact of KUR on farmer’s income

The largest beef cattle population in Indonesia in 2019 was in the provinces of East Java, Central Java, West Nusa Tenggara, East Nusa Tenggara and Lampung. Meanwhile, the largest beef cattle population in Lampung Province in the same year was in Central Lampung, East Lampung and South Lampung District [14]. The need for beef consumption for food is quite high, so it is necessary to develop beef cattle business in the community so that it does not depend on imports. Beef cattle business in the development process is not only oriented to the production or fulfillment of animal food nationally but also to increase food security and increase people’s purchasing power through increasing income. The business of fattening beef cattle is the right step to get decent meat and profits for breeders [15].

In Central Lampung District, livestock business is not a main business, other than rice and oil palm farming. The combination of farming between beef cattle and oil palm plantations or beef cattle and rice can synergize in the use of manure for crops and by-products of oil palm and rice for animal feed. In Pubian Subdistrict, which is a dry land area, about 80% of the members of the Lembu Jaya livestock farmer group (KTT) in Tanjung Kemala Village have oil palm plantations. In Rejo Asri Village, Seputih Raman Subdistrict, which is a rice field area, several farmers applied for KUR for cattle, but it was also used for rice farming.

In beef cattle farming with the aim of breeding cattle, the KUR funds obtained are intended to increase business scale. In cattle business, breeding of brood stock is more important, except in fattening business, an increase in productivity (weight of cattle ready for slaughter) can occur by using exotic feeder cattle and nutritious feed. Table 2 shows the potential increase in production and population in livestock business due to financing for farming from KUR. In beef cattle breeding business, the addition of KUR funds will increase productivity by 0.2 cows/year and increase the business scale by 2 heads/year. The impact of KUR on beef cattle fattening business will increase productivity of 0.2 kg/head/day and increase the business scale of 8 heads/year. The increase in productivity and business scale will increase the income of beef cattle farmers.
Table 2. The impact of the availability of farming financing from KUR on increasing productivity and scale of beef cattle business in the research location of Central Lampung District, 2020.

| No | Commodity     | Unit            | Productivity start | Productivity end | Productivity increase | Unit          | Scale of business start | Scale of business end | Scale of business increase |
|----|---------------|-----------------|--------------------|------------------|-----------------------|---------------|-------------------------|-------------------------|--------------------------|
| 1  | Beef cattle   | head/year       | 0.8                | 1.0              | 0.2                   | head/year     | 2.0                     | 4.0                     | 2.0                      |
| 2  | Beef cattle   | kg/head/day     | 0.8                | 1.0              | 0.2                   | head/year     | 2.0                     | 10.0                    | 8.0                      |

The results of this study are consistent with the previous study that shows that increasing financing in the agricultural sector has an effect on increasing farmers' welfare and reducing poverty in rural areas [4,5,6,16,17,18]. Regarding the use of KUR, the results of research on various case studies conducted in several locations show that KUR has a significant and positive effect on the performance of micro-enterprises. In the Province of Bali, it shows that the distribution of KUR is quite effective and has a positive and significant impact on SME income through SME productivity [19]. These results were consistent with the previous study that the number of KUR loans for farmers is able to increase farmers' business activities (planted area) and productivity through technology adoption [20]. These two things will increase production thereby increasing farmers' income.

4. Conclusions

Farmers' participation in KUR agriculture (the ratio of farmers using KUR to agricultural households) is still low. The use of KUR funds by farmers is mostly used for on-farm businesses related to production activities. The funds are generally used to buy production inputs, while in the cattle business it is mostly used to increase business scale. The availability of funds from KUR loans guarantees farmers to be able to do business with low loan interest, thus motivating farmers to do business well and be able to increase production.

The scheme of KUR has a positive impact on increasing production and income on the beef cattle business, but the level of participation is low. This can be explained that the feature of KUR is difficult for small-scale farmers to access, so farmers cannot use this KUR’s scheme. The feature of KUR are collateral requirements and a small ceiling amount, so that it is not sufficient to funding on one cycle of livestock production.

At the national level, the impact of KUR on increasing food production is determined not only by increased productivity, but also by the level of farmer participation in using KUR. The level of farmer participation in KUR in the aggregate is still low (5.23%), as well as beef cattle breeders (2.71%). To increase the impact of the use of KUR on food production, it is necessary to increase the participation of farmers. Increasing the participation of farmers and ranchers in utilizing KUR, under normal conditions will increase food production. Utilization of KUR funds to adopt recommended technology to increase agricultural productivity requires assistance from Agricultural Extension Officers and other Field Officers with the support of technology produced by the Agricultural Research and Development Agency. The effectiveness of the financing policy (KUR) needs to be supported by other policies, such as controlling imports, especially food products such as beef/buffalo.

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