

# Sustainable Study of Primary Comodity Management in South Konawe Indonesia

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*Abstract:* - The aim of the study was to investigate the sustainability of primary commodity management in South Konawe Regency, Indonesia. The unit of analysis were primary commodity of South Konawe, comprised of: cacao, rice, cow, and chicken. The dimension assessed was: (1) income, (2) transfer benefit, (3) the availability of fertilizer, food, pesticides, and medicines; (4) the independency of subsidy of the government; (5) market; (6) price; (7) the availability of the labours. The instruments of the study involved descriptive qualitative by including index and contribution. Results of the study show that cow and cacao commodity is sustained, while the product of chicken and rice are less sustained. The rare of food, medicines and fertilizers are minimum problem which sustain to the aspect of economy from the entire commodity. Another problem of the study was the low income and unstable price (the price of rice), the dependent to government subsidy (cacao farm); market (cows and chickens) and the transfer for benefit (chickens).

*Key-Words:* - sustainable, cacao, rice, cow, chicken

## 1 Introduction

The Regency of South Konawe is the new autonomous area located in Southeast Sulawesi in 2003. The decade of its independence, this area has focused on the development of its primary sector in agriculture, generally (food, farming, and veterinarian). Result of census of agriculture in 2013 shows that agriculture resource spreaded in all districts of South Konawe.

Based on the data of statistic board in 2013 the owning of the land comprised of paddy farm 6,52%, dry farm 5,77% and farming 9,67%, it is obviously that the large of the area used for the agriculture is 22,05%. This total is average to the total of the whole land of the regency used as agricultural land with 21,45%. The land used for fishing, state forest was about 45,03%. In the developing aspect, farming was significantly dominating in the previous 5 years with 26%, while gardening land rapidly decreased from 8,22% to 2,49. Agriculture entrepreneurship was the main income to PDRB of South Konawe with 32,99%. However, the contribution from agriculture sector was significantly decreased in 5 years back from 2008

with 42,99%. The second contributed of entrepreneurship is communication and transportation 19,73% and trading, hotel, and restaurant 11,88%. The devist of contribution from agriculture sector is not balance with the recruitment of the labours which is rapidly increased by the year 200 compared to the previous year, the distribution of the labours in agriculture sector increased in 2013 with 55,96%; which is categorized in highest labour recruitment. Although agriculture is included in the highest labour recruitment, the productivity of its labour remains low and categorized in the second lowest after industrial waste management. Demanding is one of the aspects which support the existence of natural resource exploration, if the bargaining is bigger from the demanding the output of natural resource could not be marketed, and automatically blocked the next production. The demanding on output of natural resource could be taken from South Konawe and other places out of South Konawe. The Regency of South Konawe has conducted some exports and imports for some commodities like cacao, dry coconut shells, nuts, cashew nuts, pepper, forest wood, cows, pigs, and

goats. Export commodities limited to wood, rattan, and marine.

The Regency of South Konawe belongs to some prior commodities which is potential to be developed although they could be locally marketed; they are chicken and rice [1]. These prior commodities are expected to be developed continuously. The sustaining products could be studied from economic, ecology, social and culture, security and association aspects. From these 5 dimensions, economy is the most entry point from the management of natural resource including agriculture.

The study on sustaining of resource management in Indonesia has been conducted by some researchers. The sustainability of economy on rice production in Southeast Sulawesi is in unsustainable category [3]; while in some sensitive attribute on the management of agriculture like: price, availability, and economy efficient [5]. Meanwhile the sustainability of off-breed cow categorized in medium sustainable. [6]. Some studies have also been conducted related to marine and fishery [7][8]. However, the study, in general yet unminimum in inputting its indicators of rareness in production (particularly medicines, food, and fertilizer) as one of the main problems in managing agriculture resource in Indonesia. The study aimed to investigate the sustainable dimension of economy in some potential commodities developed in the Regency of South Konawe, they are: cacao, rice, cows, and chickens, by inputting the availability of fertilizer, food, and medicines in accommodating the contribution of rareness in sustaining the management of prior commodities in the Regency of South Konawe. This study is a continuation of the one conducted in [29], based on the importance of strategic local planning to increase regional competitiveness as discussed in [30] and considering the impact on food price to local inflation [28].

## 2 Literature Review

The sustainable development is *development that meets the needs of the present without compromising the ability of future generations to meet their own needs* [9]. The following criterion become the guideline of sustainable development such as: ecology, economy, social and culture aspects [10][11] law and association [10] politics and security [11].

The dimension sustainability of economy could be measured through input, demand and market factors.

The relationship between production input and output called as production function. Generally, input or production factor used as the process of goods and services production of economic activity is categorized as follows: labour, land, and other natural resources, technology, and social factors like government system, culture, religion, and other association relationship. The relationship between production and production factor, systematically formed as follows:

$$Y = f(L, C, R)$$

where:

Y = Product Total

L = Labour

K = Capital

R = Resources

Each of the above production factors are related to the total of production. In other words, if the number of production factor increased the total of production also increased. However, it is urgent to concern that additional number of production factor continuously, is not automatically added the number of production. In the theory of "*Law of Diminishing Return*". Means that additional factor of production in determined increased the number of total production and when the production continue would decrease the total of production.

Input of cacao in terms of land and labour is the power of cacao developing sustaining in Southeast Sulawesi. The large of the potential area for the cacao plantation is 113.274 Ha. While the number of labour, both in the field and industry is enough. [12]. Meanwhile in food sector and veterinarian show that labour is easy to hire particularly to from local labour, however the weakness is in the operational/production, deals to simple technology, price of the seeds, and fertilizer which is unstable on the price and dealing to its rareness [2].

There are some terms suspected to influence the rareness and the increasing of the price of fertilizer to the farmer, that are: (1) domestic market for fertilizer is dualistic, there is no strict sanction, so there is no ideal distribution of fertilizer from subsidy to non subsidy; (2) illegal export, the increasing of world price fertilizer and the exchange of rupiah to dollar, (2) fanatic of farmers to certain brand of fertilizer, (4) limited storage of fertilizer, cause the price of storing and transporting expensive [13].

Meat production, the production of food considered as a main problem in Indonesia. The quality of food influence the quality of meat, that is influencing the *dressing yield*, the comparison of

meat and bone, fat and protein, the composition of acid fat, calory, the color of phisyc and cemist, durable and sensory characteristic [14]. Cow's growing using indoor system with concentrate food generally resulting higher daily weight and marbling fat , the colour of the meat is light and soft from its pastur system. Various technologies used to sustain its food availability, increasing the quality of food and optimizing its rumen function to product the meat in Indonesia. By using microorganism technology for human's food has been early introduced for animal's food in Indonesia. Microbiotic forms could be "probiotic" (bacterial, fungi, khamir or its mix), product of "fermentation" orextraxt product from the process of fermentation (usually enzim) [15].

Furthermore, marketing is one of measurements from the sutaining of economy of a production. The marketing of agriculture commodity is different from another commodity, which is tent to have a long tradition of marketing, and farmers did not have benefits from this marketing system, such as: (1) imperfect marketing system, (2) less of information, (3) less of opportunity for the farmers, (5) farmers produced their goods not based on the demands of the market and convensional [16]. This kind of marketing would automatically influence the benefit for the farmers.

For the commodity of cacao, its marketing remains efficient [17]. Marketing association involved to market the cacao product in Konawe Regency, is the traders gathers intra village who directly bought the ccao from the producers and sold it to the big market in town and next will send the cacao into big market in province. Or send it into another island. If the farmers only sold the cacao to the second seller the benefit for the farmers is 75% from the real price and the rest 25% used for the association [17].

In the sector of veterinarian, big obstacle is still faced. The pattern of veterinarian agribusiness is dispersal and vertical, the characteristic of simetric shows that the association did not work effectively with the farmers, while the work of business association from top to down is strong. This condition caused the transmtion of the price is not simetric, the decreasing of the price transmited faster to the farmers, while the increasing of the price is transmited slowly [18]. Even so, the result of the survey in this ector in southeast sulawesi shows that the farmers is in [2].

Some studies concerning to the management of natural resource has been conducted bfore. These studies used some attributes to assess the

sustainability dimension of economy, for example: benefit and income [3][5][7][8] [19];price, marketing, number of market [3][5][7][19]; labours [7][8][20]; contribution to PRDBand financial [3][8]; costumers dependence [7][8]; kinds of prior comodity [8][19]; budgetingand loan [5][8][19]; resource and large of the land [3][7][19] and the availability of production [5].

Some studies shown that the sustainability of natural resource management from economy dimension is enough for the sustainability of fishery [7]. The contribution from fishery sector to PRDB, the reliability and budget for the management of marine entrepreneurship has a high sensitivity [8]. For the sustaining of rice java and sumatera has a high index of sustaining with 50 category of sustaining,, while Sulawesi, Kalimantan, and another area are categorized low of 50 index and less sustained [3].

To push the sustainability of dimension of economy the management of primary commodity, the government has conducted some positive ways of sustaining them, government has providd subside and insentif in forms of: (a) subside for production (seeds, fertilizer, and pestiside); (b) supporting and guaranting of the product selling price by determining the ground price, (c) subside credit and (d) subside irrigation water. Subside price of production given to for fertilizer, seeds, pestiside and credit. Fertilizer is a main input to have a big subside. Subside for fertilizer is implemented since 1971 [21].

Other intervention done to sustain the management of natural resource for farming commodity National Movement for cacao is introduced in 2008. Some activities are conducted like plant rejuvenilition, plant rehabilitation, plant intensification, farmers' empowerment, providing and accompanion and training for farmers., providing for research and infrastructure and quality guarantee to meet the standard of Indonesian National (SNI) [22]. Hence, in the sector of veterinity, Indonesia has declared for the independency on cow with general principles: vetrenierempowerment, improvement of quality, of human resource, technology development, association, infrastructure development, vetrinerier data base, subside, and insentive [23].

### 3 Method of Research

The unit of analysis of the study is the primary comodity in South Konawe, Indonesia, comprised of cacao, rice, cow, chicken. The dimension of

attribute of the sustainable economy which is assessed is (1) income, (2) transfer profit, (3) fertilizer availability, food, and pesticides and medicines; (4) the independency of subsidy from the government; (5) market, (6) price, and (7) labours availability. The respondent taken for the study to assess and as decision makers consist of 12 respondents from Forestry and Agriculture Board. Deep discussion is conducted with 20 decision makers from various instants related to primary commodity in forum group discussion (FGD).

The measurement of attribute using scale of 0-3 for the attribute of: market, independency of subsidy from the government, the availability of labours, and the availability of fertilizer, food, and pesticides and medicines. Scale of 0-2 used to measure the attribute of: income, transfer of profit, and the price of analysis tools used in the study is descriptive analysis by involving index number and contribution. The counting of index using the formula of :

$$\text{IndexAverage} = \frac{\sum_{i=1}^n X_i}{n} \tag{1}$$

$$X_i = \frac{x_i - x_{i_{\min}}}{x_{i_{\max}} - x_{i_{\min}}} * 100 \tag{2}$$

where:

- $X_i$  = indeks from the attribute of  $i$
- $x_{i_{\min}}$  = minimum scale of attribute  $i$
- $x_{i_{\max}}$  = maximum scale of attribute  $i$
- $i$  = attribute economy of commodity

the interval of analysis for the sustainable index scale is 0-100%. With the category of sustainable status category based 0.00-24.99 worst/not sustained; 25.00-49.99 less sustained; 50.00-74.99 enough; and 75.00-100.00 very sustained.

## 4 Result

### 4.1 The Sustainable Of Economic Primary Commodity

The status of sustainable from economic aspect for these four research commodities shown that the commodity of cacao and cow are categorized enough. The index for cacao is 59,92, meanwhile, the commodity of chicken and rice is categorized less sustained. The sustainable index of rice is categorized less sustained from the entire commodity. Cacao and cow is categorized as primary commodity in the Regency of South Konawe and has been transferred and marketed in

national level. While rice and chicken coped to local market regency and province.

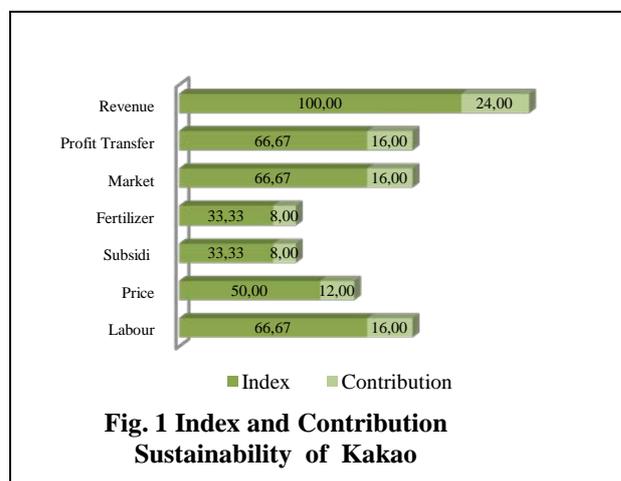
Tabell  
Sustainability of some entrepreneurship of selected commodity

comodity	Index	conclusion
cacao	59,52	averages
paddy	47,61	Less sustained
cow	51,58	averages
chicken	49,20	Less sustained

source: primary data, analyzed

### 4.2 The Sustainable of Cacao Management

Fig. 1 display the index from the sustained commodity of cacao viewed from economic aspect, and the contribution from each of the indexes. Fig. 1 shows that from the seventh attribute analyzed, two among of the attribute are less sustained and the three attributes are: the availability of fertilizer, medicines, and the dependent from government subsidy. The availability of medicines and fertilizer on cacao plantation is still limited to generate the sustainable of the development of cacao commodity. In other side, cacao farming still depends on government's policies and programs.

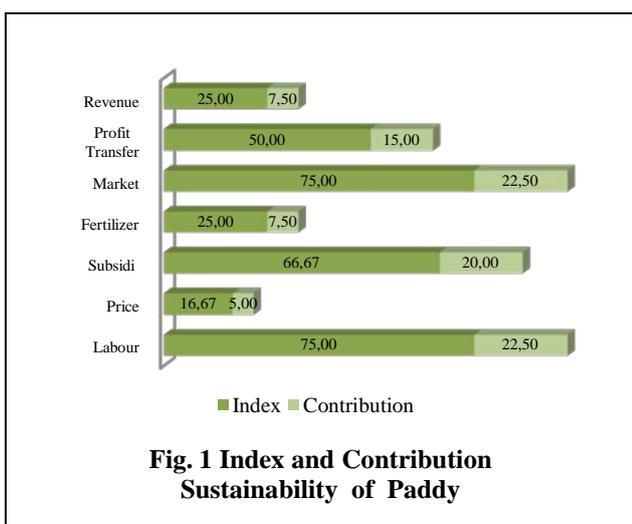


24% of the contribution is given by the value of index which is perfectly 100,00. This indicates that comparing to another primary commodity, cacao plantation is promising as a revenue. From labour aspect, market and transfer profit are listed in the second highest position, contributed to 16% of the formation of sustainable entrepreneurship. The

attribute of price is 12%, however, the status remain sustained.

### 4.3 The Sustainable Of Paddy Management

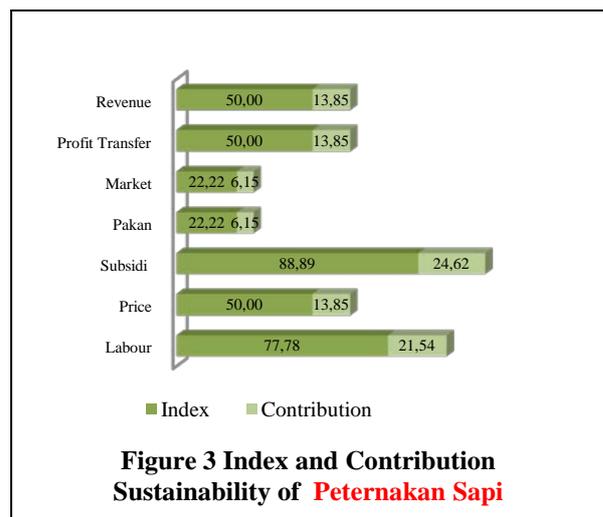
Picture 2 shows that from the seventh sustained attribute only three attributed categorized in averages sustained, they are: market, independency, and the availability of labour. Attribute of market and labour are categorized very sustained with the index 75,00, or the contribution of each attribute is 22,50%.



However, the remain problem lies to the price of paddy, this shown in the scale of index 16,67; and the contribution of the price is 5%. Some problems remains are the the availability of fertilizer and the income fro the farmers. The income for the farmers yet unstable compared to another income, therefore, for the on going period, the farmers are requested to leave this field.

### 4.4 The Sustainability Of Cow's Management

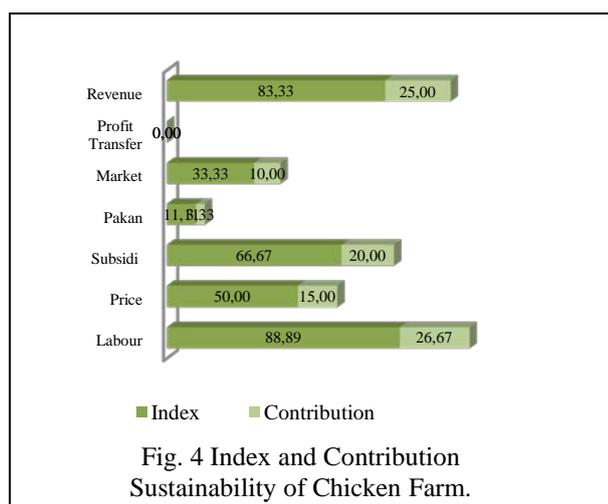
Fig. 3 shows that the index and sustainability contribution of commodity in South Konawe which shows that almost the entire attribute are sustained in the management of cow, except market and food. The highest contributed attribute is the independency from government subsidewhich reached to almost 25%; next the availability of labours contributed to 21,54%. Income attribute, transfer profit, and price is in the same category with 13,35% contribution



Although cow has entered national market through inter island trading some obstacle are still faced, respondents considered that the line of its marketing is indirectly, the system of marketing is based on the producers. Generally, the association would have lower bargaining compared to farmers, therefore, the marketing system is imperfect competition. Food is regarded as a big problem in the future as the source of cow;s food.

### 4.5 The Sustainability Of Chicken's Management

Chicken's management is considered as at the low contribution. This shown 0% to its contribution. This indicates that the price of chicken is cheaper than other resource. The index for the price of chickens is less sustained, even so, the market of chicken still give the revenue compared to other entrepreneurship. The sustainability of chicken's market is sustained supported by the availability of labours, the independency to government's subsidy,. However, there are some attribute which is not supported the sustainability of chicken management beside profit and food.



## 4.6 Discussion

### 4.5.1 Cacao Management

Result of the study shows that, from all of the commodity analyzed, there was no problems in the availability of labours. This is based on the result of the study [12][2]. Result of the study shows that the sustained attribute from economic factor is categorized sustained, except for fertilizer and independency. The independency from government's policies and programs are indicated by the policies of the local government which made the cacao as the prior commodity of southeast Sulawesi. The developing of the industry is stipulated in the regulation constitution no 10 and 11 constitution No. 3 year 2014 concerning to industry, that every governor and regent and major ought to structuring the planning of its area which guided to national industry [12].

The sustainable of cacao going revenue attribute is contributing the highest contribution as the sustained of entrepreneurship. Labours, marketing and profit transfer also give positive feedback. 75% of the didtribution of the farmers and the market are equal, and the rest of the contribution is enjoyed by the association, from outside of the regency (province, and inter isands trading) [17].

### 4.5.2 Paddy Plantation

Revenue remain the problem in paddy plantation, as well price and fertilizer. Generally, the income and the profit for the farmers in southeast Sulawesi (included in the regency of south konawe) is still low compared to the averages of national rate this is indicated by the exchange rate of the paddy farmers with the index accepted in the years of 2013 about 119,00, while national income was 156,94. With the index 119,00 the farmers in southeast sulawesi should spend some budgets for additional

production cost to reach index 118,29. So, the income for the farmers would not be spent for the next budget.

In onother side, the production price of dried sheed f pddy (GKP)in farmers; level in southeast sulawesi is also lower than national rates average. In 2013 the price of GKP was 3.264,47 per kg; while national price was 3.962,78. This shows that the price of paddy tent to benefit to the farmers in southeast sulawesi include south konawe.

Fertilier supposed to be reduced from the subside of the government, regarding its rareness as the problems faced by the farmers. Due to its rareness, it caused *rent-seeking supported by attitude and monopli action*. The attitude of the distributor which caused the rareness of the fertilizer by increasing the price from 100-400% [25].

### 4.5.3 Cows and Birds

The ground problem of cow's management is marketing and food. Comodity of chikcken lies to profit transfer, food and market. Non association and assimetry from the business conducters caused the weakness realtion, while the strong power from the top down management caused the low attribute for the contribution [18].

Food is regarded as one side problem in south konawe, the stock of dry sheed of paddy is sufficient, because of the support of paddy plantation sector, but the system of paddy concentrate is low, due to the anomation concentrate is higher than non anomation paddy [26]. The availability of food is still conventionally conducted, and the using of prebiotic and microorganism yet unused to genertae the result of production, the price of food still expensive for the farmers. The index of production cost and additional price in the sector of agriculture in 2013 was about 120,35; while in paddy plantation was 118,29, horticulture was 112,98 and public gardening (include cacao) was 116,08, therefore he problem food for veterinarian remains classic problem in the country.

There are some efforts could be taken to overcome the expensive price of food price that are: (1) developing and using local food in organizing the food to reduce the import cost, (2) cooperating with the research institution to seek the alternative of potential exchange materials, which is far of competition and the needs of the human and can be continuously used for the veterinarian food.

## Conclusion

1. The commodity of cow and cacao are relatively sustained. The index of cacao is categorized high sustained with 59,92. While the commodity of chickens and paddy are categorized in low index from the entire researched commodity. The rareness of fertilizer is the ground problem the rareness of fertilizer is caused by rent seeking and still managed by conventional.
2. The cultivation of paddy plantation is facing the lower income and unstable price. In other sides, the price of dried paddy seeds (GKP) to the farmers is also low compared to national rate of price.
3. Although the market for cow entered national market through inter islands trading however, the distribution from the marketing through collector which has strong bargaining price compared to the price from the association.

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