Institutional Systems In Planning And Strategy For Oyster Mushroom Business Development

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Abstract. The development of oyster mushroom business has not been able to meet the increasing consumer demand both in terms of quality and quantity. This happened because of limited funds and application of technology, limited skilled workers, and institutional optimization. Therefore the study aims to analyze: factors that affect the weak coordination function, and Strategic programs in the development of oyster mushroom business. The study was conducted in Enrekang District, South Sulawesi Province. Data were collected by descriptive research through an expert system approach using survey methods. Interpretative Structural Modeling (ISM) used to analyze a strategic program in the development of the oyster mushroom business. The results showed that, Factors causing the weak coordination function in the planning and development of oyster mushroom businesses are Weak formation/training, Institutional disengagement from the start, and Weak Organizing; More strategic programs in planning and developing the oyster mushroom business are Provision/access to capital resources, Oyster Mushroom Price Guarantee, Increasing farmers' knowledge and skills, and Effectiveness of counseling in the field.

1. Introduction

Cultivating mushrooms is a friendly profession for women. This is one of the activities in which women can play an important role without sacrificing their domestic responsibilities. Mushroom production provides a number of opportunities to increase the sustainability of smallholder farming systems and rural development [1]. Changes in the community's paradigm of a healthy lifestyle lead to an increase in the amount of consumption of foods that are considered healthier, including the consumption of oyster mushrooms. Mushroom carbohydrates have been found in many cases has anti-cancer properties[2]. Enrekang Regency is one area that has the potential to develop oyster mushroom commodity. This is due to geographical location and suitable agro-climate conditions for raising oyster mushrooms. The development of the oyster mushroom business in Enrekang Regency began in 2012-2016 which in its activities have not received maximum attention from various related institutions. By looking at the production produced by farmers an average of 200 gr for the 1 kg baglog planting season size, it has not been able to meet the increasing consumer demand both in terms of quality and quantity [3].

Processes involving institutions, both in the form of organizational institutions and institutional norms and governance arrangements, are generally still centered on the coaching process on a certain scale. This indicates that there are institutions that should play a role but do not show a significant role as well as weak management functions and the lack of optimal coordination functions between related institutions in the programs or policies involved in the planning and development strategies of the
oyster mushroom business in Enrekang Regency. In addition, institutions which are not institutionalized cause sectoral egos, horizontal and vertical conflicts between existing institutions [4].

With various problems related to the production, post-harvest, storage and marketing processes, there is still more emphasis on individual abilities and skills. Processes involving institutions, both in the form of organizational institutions and institutional norms and governance arrangements, are generally still centered on the coaching process on a certain scale [5]. This indicates that there are institutions that should play a role but do not show a significant role as well as weak management functions and the lack of optimal coordination functions between related institutions in the programs or policies involved in the planning and development strategies of the oyster mushroom business in Enrekang Regency [6].

Institutions that are not institutionalized cause sectoral egos, horizontal and vertical conflicts between existing institutions [7]. One indicator is the production data that has not been processed in the form of a statistical agricultural database while the concentration of oyster mushroom cultivation produced by farmers from year to year is increasing [8].

2. Method
The research was conducted in Enrekang District, South Sulawesi Province. Data were collected by descriptive research through an expert system approach using survey methods. Interpretative Structural Modeling (ISM) used to analyze a strategic program in the development of the oyster mushroom business [9].

3. Results and Discussion
Factors Causing Weak Coordination Function in Planning and Development of Oyster Mushroom Business. ISM analysis results show that the 10 sub-elements that cause the weak coordination function in the planning and development strategy of the oyster mushroom business are distributed in two sectors, namely: (1) linkage, and (2) dependent. Sub-elements of the 10 suspected factors, there are 9 of them that affect the weakness of the coordination function based on the frequency of power and dependent drivers, as presented in Table 3. Whereas to see the position of the causes of the weakness of each factor, the 10 factors are separated through the driver matrix power-dependence as presented in Table 1 and Figure 1.

Factors Cause Weak Coordination Function in Linkage Position
ISM analysis results show that there are nine factors in the position of linkage that affect the weak coordination function, namely: (1) Weak training / training, (2) Institutional disengagement from the start, (3) Weak commitment of government officials, (4) Weak organizing, (5) Low quality of apparatus resources, (6) Lack of social control, (7) Lack of oyster mushroom association, (8) Lack of coordination between institutions, and (9) There are sectoralistric attitudes with an average weight DP = 0.83 and D = 0.78 (Figure 1 and Table 1). The result shows that the nine factors have a big influence on the weak function of coordination but the dependence on other factors is also large.

Factors Cause Weak Coordination Function in Dependent Position
ISM analysis results show that in the dependent position there is only one factor that is a cause of weak coordination function, namely the existence of a policy that is Top Down with the weight of the power driver and dependence is DP = 0.40 and D = 0.90 (Table 1 and Figure 1). Data shows that the factor has a small influence on the weak coordination function, but its dependence on other factors is large. The existence of policies in planning carried out by the government as the initial idea giver and the government has a more dominant role in regulating the course of the program that starts from the planning to the evaluation process, where the role of the community in this case farmers is not so influential [8]. Farmers cannot play a more active role because the government is more dominant so they cannot see how far the program has been implemented.
### Table 1. Position and Comparison of Weight of DP-D Causes of Weak Coordination Function in Planning and Development of Oyster Mushroom Business.

| Notes: | Position | Sub element | Weight | ***) Key Cause Factors |
|--------|----------|-------------|--------|-----------------------|
| DP dan D ≤ 0,50 = small | 1. Linkage | Weak guidance/training | 1,00* | 0,60 |
| 2. Institutional disengagement from the start | 1,00* | 0,70 |
| 3. Weak commitment from government officials | 0,90 | 0,70 |
| 4. Weak organization | 1,00* | 0,80 |
| 5. Low quality of apparatus resources | 0,70 | 1,00 |
| 6. Weak social control | 0,60 | 0,80 |
| 7. There is no oyster mushroom association | 0,70 | 1,00 |
| 8. Weak coordination between institutions | 0,80 | 0,70 |
| 9. There are sectoral centric attitudes. | 0,80 | 0,80 |
| Average | 0,83 | 0,78 |
| DP dan D > 0,50 = large | 1. There is a policy that is top down | 0,40 | 0,90 |
| Independent | Average | 0,40 | 0,90 |

Notes:
A = There is a policy that is top down
B = Weak commitment from government officials
C = Institutional disengagement from the start
D = Weak Organization
E = Low quality of apparatus resources
F = Weak guidance/training
G = Weak Social Control
H = There is no oyster mushroom association
I = Weak coordination between institutions
J = There are sectoral centric attitudes

**Figure 1.** Driver Power-Dependence Causes of Weak Coordination Function in the Planning and Development of Oyster Mushroom Business.

Strategic Program in Planning and Development of Oyster Mushroom Business. ISM analysis results show that of the 12 suspected programs, 10 of them are strategic programs. The importance of each program can be identified through the size of the frequency of driving power (driver power) and its dependence (dependence) as presented in Table 5. To see the position of the interests of each
program in the planning and development of the oyster mushroom business, a separation based on the frequency of power - dependence drivers (DP-D) in the form of a matrix as shown in Figure 5, while the weight ratio DP-D of each program can be seen in Table 2.

ISM analysis results show that in an independent position, there is a strategic program and is a key strategy in developing oyster mushroom business with a weight of DP = 1.00. The program is (1) Provision / access to capital resources. The availability of capital for the oyster mushroom business actor becomes very important in increasing its production both in terms of quality and quantity. Therefore, through stimulation provided by the government in terms of ease of access to capital institutions independently, it is hoped that it can stimulate the growth of business groups and accelerate the formation of a network of agricultural institutions that will be the embryo for the growth of core regional development areas so as to increase entrepreneurship and productive economic business development [9].

**Strategic Program in an Independent Position in the Planning and Development of Oyster Mushroom Business**

ISM analysis results show that in an independent position, there is a strategic program and is a key strategy in developing oyster mushroom business with a weight of DP = 1.00. The program is (1) Provision / access to capital resources. The availability of capital for the oyster mushroom business actor becomes very important in increasing its production both in terms of quality and quantity. Therefore, through stimulation provided by the government in terms of ease of access to capital institutions independently, it is hoped that it can stimulate the growth of business groups and accelerate the formation of a network of agricultural institutions that will be the embryo for the growth of core regional development areas so as to increase entrepreneurship and productive economic business development [9].

**Strategic Program in Linkage Position in the Planning and Development of Oyster Mushroom Business**

ISM analysis results show that there are ten more strategic programs in the planning and development of oyster mushroom businesses in the linkage position, namely: (1) Effectiveness of coordination between institutions, (2) Application of technology, (3) Effectiveness of extension agents in the field, (4) Increased knowledge and apparatus skills, (5) Effectiveness of the role of government institutions, (6) Strengthening control functions, (7) Increasing farmers’ knowledge and skills, (8) Increasing the quality and quantity of production, (9) Guaranteed oyster mushroom prices, and (10) Increasing society participation. These ten programs are in the position of linkage with an average weight of DP = 0.87 and D = 0.84 (Table 2 and Figure 2) [10]. Among the ten strategic programs, three programs in this position are key programs with a weight of DP = 1.00, namely: (1) Effectiveness of extension agents in the field, (2) Improvement of farmers’ knowledge and skills, and (3) Guaranteed oyster mushroom prices.

**Table 2. Position and Weight Comparison of DP-D Strategic Program in Oyster Mushroom Business Development**

| Notes : |
| DP dan D ≤ 0,50 = small | DP dan D > 0,50 = large | *) Key Cause Factors |
|---|---|---|
| Position | Sub element | Weight | |
| 1. Independent | 1. Provision / access to capital resources | 1,00* | 0,50 |
| (The impetus for the program is strong, the reverse dependence on other sub elements is weak) | | | |
| | Rata-rata | 1,00 | 0,50 |
| 1. Linkage | 1. Effectiveness of coordination between institutions | 0,92 | 0,75 |
| (Daya dorong terhadap program kuat, dan ke-tergantungan terhadap sub elemen lainnya juga kuat) | 2. Application of technology | 0,75 | 0,92 |
| | 3. Effectiveness of extension agents in the field | 1,00* | 0,92 |
| | 4. Increased apparatus knowledge and skills | 0,92 | 0,92 |
| | 5. Effectiveness of the role of government institutions | 0,83 | 0,75 |
| | 6. Strengthening control functions | 0,75 | 0,92 |
| | 7. Improvement of farmers’ knowledge and skills | 0,75 | 0,67 |
| | 8. Increasing the quality and quantity of production | 1,00* | 0,92 |
| | 9. Price guarantee for oyster mushrooms | 0,92 | 0,67 |
| | 10. Increased community participation | 1,00* | 1,00 |
| | Average | 0,87 | 0,84 |
| 2. Dependent | 1. Rewarding for successful farmers | 0,25 | 1,00 |
| (The impetus for the program is weak, and conversely the | | | |
| | Average | 0,25 | 1,00 |
dependence on other sub-elements is strong)

Notes:

A= Effectiveness of coordination between institutions
B= Application of technology
C= Effectiveness of extension agents in the field
D= Increased apparatus knowledge and skills
E= Effectiveness of the role of government institutions
F= Strengthening control functions
G= Improvement of farmers' knowledge and skills
H= Increased community participation
I= Provision / access to capital resources
J= Increasing the quality and quantity of production
K= Price guarantee for oyster mushrooms
L= Rewarding for successful farmers

Driver Power (DP)

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|----|----|----|---|---|---|---|---|---|---|---|---|
|    |    |    |   |   |   |   |   |   |   |   |   |

Independent

Autonomous

Dependent

Linkage

Driver Power (DP): 12

Dependence (D): 1

Figure 2. Driver Power-Dependence Structure of the Strategic Program for Oyster Mushroom Development

Strategic Program in a Dependent Position in the Planning and Development of Oyster Mushroom Business

Sub-elements which are incorporated in this dependent position are: (1) Giving rewards to farmers who achieve the highest productivity by obtaining the weight of power and dependent drivers namely DP = 0.25 and D = 1.00. The weight of the driving power (driver power) of these sub-elements only reaches 0.25, while the dependence on other sub-elements (dependent) reaches 1.00. The small weight of the DP indicates that the contribution of this sub-element to the planning and development strategy of the oyster mushroom business is very weak, while the magnitude of the weight D is an indication that the dependence on other sub-elements is very large. Therefore, in the interest of developing the oyster mushroom business, the sub-elements in the position are not strategic programs that must be optimized [11].

Structural Model of Strategic Programs in Oyster Mushroom Business Planning and Development. To see the linkage structure of sub-elements of the program that is more strategic in the planning and development of the oyster mushroom business, a structural model can be arranged as shown in Figure 2. The main priority strategy is the key program (weight DP = 1.00), which consists of four sub-elements occupying level 1 positions (Figure 4.6). These four programs are: (1) Provision / access to capital resources, (2) Guaranteed oyster mushroom prices, (3) Increased knowledge and skills of farmers, and (4) Effectiveness of counseling in the field. Furthermore, three other sub-elements that are at level 2, namely: (5) Increasing the quality and quantity of production, (6) Effectiveness of coordination between institutions, and (7) Increasing the knowledge and skills of officials. Level 3 positions are: (8) Effectiveness of the role of government institutions. Furthermore, at level 4 there are two sub-elements occupying these positions, namely: (9) Strengthening control functions, and (10) Application of technology. (11) Increased community participation at level 5 and the next sub-element at level 6: (12) Giving rewards to farmers who achieve the highest productivity.
4. Conclusion

Based on the results of research using the Interpretative Structural Modeling (ISM) analysis method and the discussion of empirical studies it can be concluded that: (1) Factors causing the weak coordination function in the planning and development of oyster mushroom businesses are Weak training, Institutional involvement from the start, and Weak Organizing. (2) Strategic programs in the planning and development of oyster mushroom business are Provision / access to capital resources, Oyster Mushroom Price Guarantee, Increasing farmers' knowledge and skills, and Effectiveness of counseling in the field.

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