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Development of Institution Structure of Agriculture Resources Management at Pesantren

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Abstract

Multirole of pesantren demand are very complex and dynamic in human development and agriculture development. Pesantrens who have noble values, the spiritual capital as well as agricultural resources are expected to drive the development of agriculture. However, the problem complexity that exist bring pesantren to changes overall and continuously to achieve its goals. This study aims to identify the key elements of the development of the institutional structure of agricultural resource management at pesantren, and also strategy formulation as well as institutional model implementation. Analysis of the institutional structure used Interpretive Structural Modeling (ISM), and prioritizing implementation models strategies used Exponential Comparative Method (ECM). Financing institutions identified as key elements of institutional structures at pesantren has agricultural resources. Pesantren as social institutions have the potential of agricultural resources managed by the cooperative venture or other productive enterprises. The agency is highly dependent on the financial institutions supporting with a particular scheme in order to promote the sustainability of educational activities and business management that grew up in pesantren. Institutional management of agricultural resources is reinforced by economic institutional community based on faith and good deeds that create a balance of material and spiritual well as the interests of the individual and society. Priority implementation strategy including the competency development of HR pesantren, pesantren leadership cadre and the development of vision-mission in accordance with the paradigm of sustainable development.

Keywords: institution, pesantren, spiritual, *Interpretive Structural Modelling*, agricultural resources

INTRODUCTION

In the past, agricultural development is directed to achieve high productivity to be able to realize food sustainability. However, the development did not have a strong foundation to utilize the available resources, so that there was not an actual increase in productivity [1]. At the present, the national development strategy is focused on the efficient management of natural resources supported by qualified human resources. The main activity within this strategy is the development of the agricultural sector. The rural population becomes the basic agricultural activities to support food source and community nutrition. If the rural communities are powerless, a provider of food stops and lead to food imports. Therefore, in 2010-2014 the government implemented food security development aimed to achieve the people's welfare.

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According to Food Law [2] , food security is a shared responsibility between the government and the public. The government is obliged to 3 things: (1) ensuring the availability of adequate food and evenly; (2) the affordability of food that is effective and efficient; and (3) the fulfillment of food consumption for each individual religious people, nutritionally balanced, safe and *halal* (allowed by Islamic law). The implementation of the food security system cannot be separated from food sovereignty and independence that must be supported by food safety [3]. One of the efforts to make it happen is by exploiting local resources potential using specific local technology and environmentally friendly. On the other hand, the government should encourage people to be willing and able to consume a variety of food, nutritionally balanced, safe and *halal*.

Next priority agenda on agricultural development for 2015 - 2019 includes an increase in agro-industries and increase food sovereignty. Food sovereignty is reflected on the power to independently regulate food problems, supported by: (1) food security, especially the ability to meet domestic food production; (2) management on food policy formulated and determined by the

nation itself; and (3) is able to protect and prosper the main actors of food, especially farmers and fishermen.

In addition to these programs, the Ministry of Agriculture launched several groundbreaking programs to accelerate the achievement of sustainable agriculture, especially in food.Some of them are Development of Food Barn (PLP) program, Accelerated Food Consumption Diversification (P2KP), Region Sustainable Food House (KRPL), Empowering Rural Agribusiness through the independent organizations Rooted in Rural Areas (LM3), and the application of methods of System of Rice Intensification (SRI). Ministry of Agriculture also develops barns communities by facilitating barn infrastructures, filling food reserves and the strengthening of the group. The empowerment of communities can manage food reserves in the group while increasing role in running the economy functions for its members. The real form of PLP activities include collecting the savings of rice and grain from farmers, or collecting products of other crops such as cassava, maize, palm to be stored in the barn. Other activity managed by PLP is distributing rice in the rice trading activities.

P2KP program is a movement of the Ministry of Agriculture as a follow up of the Presidential Regulation No. 22 Year 2009 on Food Consumption Diversification Acceleration Policy with a Local Resources base. P2KP program is implemented in three main forms of activities, namely: (a) Optimizing the Utilization of courtyard through the concept of Sustainable Food Houses Region / KRPL; (B) Development of Local Food; and (c) Promotion and Dissemination P2KP. KRPL is the concept of the area optimally utilize the garden as a source of food and nutrition in a sustainable manner. The implementation at the village level with women who have a large role in determining household food consumption patterns as the target group. Commodity products that are developed starting from vegetables, a variety of local foods such as tubers, medicinal plant families (toga), the poultry, rabbit, and other livestock. Basically, utilizing the yard is not a difficult task in the condition: all family members can help manage them, setting garden plants is not difficult, food can be produced continuously with crop rotation is good, livestock muck can be used as fertilizer for crops and crop residues can be used to feed livestock, consumption of healthy and nutritious food. [3] Implements LM3 program to develop agricultural business by empowering human resources, institutional strengthening and facilitating the strengthening of venture capital, as well as mentoring. The program is integrally carried out from the process of planning, organizing, implementation, to monitoring and evaluation based on performance indicators. LM3 is a formal organized institution, grow and develop independently in the community, with the main activity of moral improving movement through education, social, and religious. Institutions involved include pesantren, parishes, seminaries, churches, and Subak (local water system). LM3 empowerment is aimed to address the low quality of human resources and management and mastery of technology limitations. Facilitating venture capital strengthening LM3 is intended to address problems in agricultural development. Empowerment and development patterns can stimulate the growth and development of agribusiness in rural areas. Thus LM3 have the power and the potential to be developed as a driver of rural development.

The programs are applied to farmer institutions. Although individually, farmers are less likely to organize and in institutions are less involved in decision-making [4]. In general, agricultural HR is currently experiencing a downward trend, so that the institutional role is lowered. Institutional farmers do not have a value system that can move the agricultural management. The Institutional is formally established as a forum for farmer's aspirations and objects of government programs. Therefore, it needs the institutions that have the value system and build spirituality for agricultural development. Pesantren as a social institution that has been rooted in the community and have an agriculture culture is expected to grow back its culture. Although pesantren do not maintain their agricultural tendency for society's demands for formal education. This forced some pesantrens gradually relinquish his wealth in the form of agricultural land for the development of education. Agricultural land owned by pesantren is changing their use as building classrooms, hostel or dormitory students, some are even sold to other parties due to the interest in high land prices. Thus, no more food is taken from its resources, but provided outside schools.

Pesantrens that still run agriculture face with a dilemma conditions. Empathy from local governments to pesantrens owning agricultural resources (SDP) is also not yet focused and less encouraging. Government programs in agricultural sector are sometimes not siding with

the public even more to pesantren. An agricultural technology applied is also less geared to local conditions and capabilities of human resources. In addition, agricultural products produced resale value less competitive with market prices. Another problem that pesantren has to face today is associated with climate change. Pesantren that owns farm still does not have a system of adaptation, making its potential can not be optimized. Although the teachings of Islam mentioned that farming is a blessed job and highly recommended.

In line with the development and the need for preservation of natural resources and the environment, pesantrens have an important role and strategic environmental management efforts, as submitted by the daily executor of Head of Regional Environmental Management Java in the opening speech of Socialization Ecopesantren Program and Formation of Pondok Pesantren cadre in 2010 in Yogjakarta. It can be seen from some of the things behind it. First, pesantren is the oldest educational institutions in Indonesia, so its presence is very entrenched and influential in the community. Second, it becomes the youth educational institution that combines ethics, morals and religion, thus contributing to the younger generation who scored noble. Third, an educational institution that is instrumental in the assessment, teaching and preaching, so that various activities and preaching can invite people to behave in an environmentally friendly and treat the environment in accordance with the guidance of the Qur'an and Hadith.

Tactical strategic pursued by Ministry of Environment involves Ministry of Religion to make a joint commitment in environmental management. This commitment is expressed in the Document of Understanding (MoU) No. B-17 / DED.VI / LH / XII / 2006 and DJ.II / 511E / E / 2006 concerning the Development Role of Islamic Education in Environmental Management. Eco-pesantren becomes one of the government programs through the Ministry of Environment to empower pesantren in efforts to conserve the environment. Eco-pesantren is basically an institution to realize the environmental preservation based on the values and traditions of pesantren. Eco-pesantren is initially aimed to: (1) empower pesantren community to improve the quality of the environment based on the Quran and Al-Sunnah; (2) increase knowledge and awareness about environmental protection and management of pesantren community; (3) improve the implementation of Islamic teachings about environmental protection and management in the daily activities in pesantren and community; (4) realize a clean, healthy and environmentally friendly pesantren; (5) increase the activity of pesantren that have added value economically, socially and ecologically for the pesantren community and its surrounding communities; and (6) make pesantren as a model for Islamic-based educational environment learning for its community and the surrounding [5].

Pesantren is a separate community under the leadership of kiai assisted by ustad, living together with the students (santri) with a mosque as a center for teaching and learning activities, as well as the huts (dormitories) as the residence of the students and they live creative, like a family [6]; [7]. Values and norms in pesantren become important parts in the development of society who are generally located in rural areas [8]; [7]. Pesantren is also supported by natural resources, such as land and water, infrastructures and facilities; religious values and the underlying spiritual activities of daily living as well as human resources, including leadership. The value of independence, simplicity and togetherness is manifested in fulfilling food needs through the tradition of farming and animal husbandry. However, this agricultural tradition is eroded by the speed of development, especially if it has not been managed optimally.

Problem faced by pesantren that has agricultural activities is not simple, it can come from various aspects including bio-physical, structural and cultural. Pesantren faces three problems: SDA, value system, and organization. Utilization of natural resources by pesantren faces in land tenure that are not strong (still owned by the management or the board pesantren). Based on the function, it appears traditional management issue that is no yet professional and rational [9]. [10] finds the cause of the low creativity of management, there is no communication on the pesantren problems, there is no partnership, as well as government programs that are not running. Pesantren is also addressing the issue of environmental damage that affects the continuity of activities and the surrounding community. Moreover, the pattern of main food in pesantren is less varied and less balanced nutrition [11]. Facing such conditions, pesantren cannot walk alone, especially its strategic role is to be advocates of the parties to work together in the strength and independence in order to

achieve sustainability of food in pesantren in harmony.

The complexity and diversity of Pesantren become actual problems in its institutional development. Communication among kiai with ustad and students with ustad were showed ustad as the more effective channel [12]. It creates exclusive leaders of pesantren (Kiai). His charismatic greatly affect change in the character of students. Related with cultivation farming culture in pesantren, change of behavior of students is strongly influenced by the knowledge, skills, education, attitude, commitment, leadership, and organizational structure [13]. The behavioral changes can be done to empower students [14]. Pesantren community also builds a movement of environmental management in accordance with the motivation of faith and knowledge of the value of religion to be a caliph (leader) in the earth [15]. The figure of leader (kiai) and pesantren community as well as the values contained therein are related as a boarding school system that cannot be controlled by one or two specific and mechanistic methods to overcome the changes that have become a necessity. With a systemic approach which is a meta-concept or meta-discipline of all disciplines can be combined to achieve the objectives [16]; [17]. Thinking the system is always looking for integration between parts through the whole understanding, so that the complexity of the existing problems can be formulated in a new framework to achieve the goals of the change. The study of institutional change in pesantren aims to identify the key elements of the development of the structure of the institutional system of agricultural resource managers at pesantren as well as its formulation for institutional model implementation strategy.

RESEARCH METHOD

Food issues cannot be separated from agricultural development. Prerequisites for sustainable agricultural development require availability of: agricultural land, seeds and seedlings, infrastructure and facilities, human resources (HR), finance farmers, farmer institutions, as well as technologies and industries downstream [3]. While Indonesia's population growth rate reached 1.4 percent in 2014 [18]. This situation can result the imbalance of the availability of food. This condition can also lead to imbalance problems or damage to the environment due to uncontrolled exploitation. Damage is generally due to the lack of wise and sensible to exploit the maximum of resources provided by God for His people. Therefore, it is important to change the mindset of people who are driven by the great value that comes from God as a spiritual capital.

The linkage of food, agricultural, environmental and human resources are complex and dynamic. Achievement of the objectives of this complex situation will not be effective if resolved with pragmatic and mechanistic [19]. System approach is required to always seek the synergy among a section through a holistic understanding [20]. In addition, it is needed also an organizational analysis approach which features a system for change and movement to achieve the success. The systems approach is understood as a way of solving the problems that began with the identification of a number of needs so that it can generate an effective operation of the system [21]. Characteristics of the systems approach are: (1) complex because of the interaction between elements is quite complicated, (2) dynamic, there are changes in the factors according to time and there are predictions into the future, and (3) probabilistic, it is needed the opportunities functions and inference for conclusions and recommendations.

Method of development on institutional system structure is using Interpretive Structural Modeling (ISM) techniques, the assessment process group (group learning process). ISM method describes the hierarchical structure of elements and sub-elements, identifies the key elements of every element and identify the characteristics of sub-elements based on the level of dependency and power drivers [22]; [23]; [24]. ISM analysis and the way of thinking systems can design conceptual model of the institutional system. The model is not sought from the depiction of the real world or engineering some ideal system, but something that stands out, one of the possibilities, as well as systems that are relevant to human activity. The final stage of this study validated the conceptual model by using the method of face validity [25]; [20]. This method is performed by a roundtable discussion and in-depth interview to the experts chosen to model characteristics such as the objectives, scope, systematic, functions and logic thinking. Further, the implementation of a model is drawn up a priority strategy by using Exponential Comparative Method (MPE), the assessment criteria and the order of priority according the criticality rate calculated by the exponential function [26]; [23].

Data Collection Method

The type of data research includes primary and secondary data obtained from the literature as well as field observation. Selection of expert respondents in the field observation and expert survey used purposive sampling approach by selecting respondents based on the criteria of knowledge, expertise and experience in their field [27].

The study was conducted with the literature study, expert surveys and focus group discussions (FGD). Secondary data were obtained through a search of data and information in accordance with the subject studied in the form of electronic data and other relevant documents from various institutions. The data collection was conducted from October 2014 until December 2015.

Selection of the object of study was conducted purposively in 6 pesantrens that have agricultural activities in three districts, namely: (1) Yayasan Pesantren Pertanian Darul Fallah, Ciampea - Bogor; (2) Pesantren Asshiddiqiyah 7, Cijeruk - Bogor; (2) Yayasan Pendidikan Islam Al Uzlah, Pacet - Cianjur; (4) Yayasan Pesantren Al Muhajirin Al Musri, Ciranjang - Cianjur; (5) Yasayan Pesantren Al Barkah, Soreang - Bandung; dan (6) Pesantren Al Ittifaq, Ciwidey - Bandung. Pesantren used as a sample are a formal institutions that have legal entity as a foundation and have experience in LM3 program initiated by the Ministry of Agriculture since 2006. The determination of the respondent experts (respondent thinking) based on several requirements: (1) an extensive discipline background, (2) the composition of the group that has a variety of positions, (3) the uniformity of the mindset of mutual interest, (4) the awareness of participants about the importance of giving opinions that are responsible, and (5) not to expect the consensus imposed [28]. The most important selection of respondents is also based on a willingness to be a responder. Data and information are obtained from 29 thinking respondents.

Data Analisys Method

ISM analyzes the system elements and presents it in a graphical of any direct relationship and the level of the hierarchy. Elements of the system can be objects of policy, organizational goals, and factors of assessment, policies and others. A direct relationship can be varied within a context that refers to the contextual relationship, such as element (i) "better than" or "is success through" or "will help the success" or "more important than" element (j). Step-by-step analysis of the ISM technique is as follows [29]; [24]; [30].

(1) Identification of elements, which each element of the system will be identified and registered for the overall success of research, brainstorming and others.

(2) Contextual relationship, is a contextual relationship between the elements that are developed and depended on the object model of the exercise.

(3) Structural Self Interaction Matrix (SSIM), is the matrix that presents the respondent's perception of each element to the direct relationship between elements. Types of relationship can exist between two elements of the system with a consideration which is symbolized by the four symbols, namely V, A, X, and O.
   - V : states the relation of elements E_i to E_j, but does not apply to reverse.
   - A : expresses the relation of the element E_j to E_i, but does not apply to reverse.
   - X : states inter-relationship between the elements E_i and E_j, and applies to both directions
   - O : represents that element E_i and E_j are not related.

(4) Reachability Matrix (RM), which provides a symbolic change SIM into a binary matrix corresponding conversion rules. For all if $E_{ij} = 1$ and $E_{jk} = 1$ then $E_{ik} = 1$, so the initial RM modifies it to show all the achievements directly or indirectly.
   - If the relation E_i to E_j is the V in the SSIM, the elements $E_{ij} = 1$ and $E_{ji} = 0$ in the RM.
   - If the relation E_i to E_j is A in SSIM, the elements $E_{ij} = 0$ and $E_{ji} = 1$ in the RM.
   - If the relation E_i to E_j is X in SSIM, the elements $E_{ij} = 1$ and $E_{ji} = 1$ in the RM.
   - If the relation E_i to E_j is O in the SSIM, the elements $E_{ij} = 0$ and $E_{ji} = 0$ in the RM.

   Initial RM then modifies it to show all the achievements, directly or indirectly, all of them if $E_{ij} = 1$ and $E_{jk} = 1$ then $E_{ik} = 1$.

(5) Level Partitioning, which performs the command to classify the elements at different levels of a structure ISM. That means two sets are associated with each element E_i of the system. Reachability Set (R_i), is a set of all the elements that can be reached from the element E_i, while antecedent Set (A_i) is the set of all elements that can be achieved by E_i.

(6) Canonical Matrix, is grouping the elements at the same level in the matrix. The success of the triangular matrix is almost the top of the elements are 0 and triangle bottom element is 1. The matrix can then be used to prepare a digraph.
(7) Digraph, is a pattern (term) obtained from the directional graph and as the reference is a graphical representation of the elements, the direct connection and the level of the hierarchy. Initial graph is provided in the canonical basis matrix is then shortened through the transfer of all transitivity into the shape of the final digraph.
(8) Structural Model, is the ISM model generated through the transfer of all the element number with a description of the actual elements, so as to give a very clear picture about a system of elements and the connection flow.

Prioritization of implementation strategies on institutional models used Exponential Comparative Method (MPE). This method assesses score the order of priority to be great, as calculated by the exponential function. The chosen was based on several criteria by stages; (1) Determining alternative strategy on model implementation; (2) Formulating of the decision criteria to be determined; (3) Determination of the degree of the relative interest of each decision criterion by using a particular conversion scale according to the needs of decision makers; (4) Determination of the degree of the relative interest of each alternative decision; and (5) ranking the value derived from each alternative strategy. Formulation of calculating total value of each option is as following decision.

$$TN_{(i)} = \sum_{j=1}^{m} \left(RK_{(ij)}\right)^{TKK\,(j)}$$

where: $TN_{(i)}$ is the first total value of alternatives, $RK_{(ij)}$ is the degree of relative interest of criteria for all j at the i-th decision, which can be expressed by an ordinal scale, $TKK_{(j)}$ is the degree of interest of decision criteria ke- j, expressed by weight round (TKK> 0); n is the number of decision options, and m is the number of decision criteria.

RESULT AND DISCUSSION

Structure on Institutional System

The system structure was developed by the expert input to analyze ISM. The result is structural information in the form of hierarchical sub-element among other sub-element. Classification of sub-elements was based on characteristics represented by the level of driver power and level of dependency of each sub-elements in one element of the system as well as the identification of the key elements. [22] and [23] formulate the structure of a system consisting of 9 elements, namely (1) the public sector who are affected by the program; (2) The need of the program; (3) The program's main obstacle; (4) Changes that are possible in the program; (5) The purpose of the program; (6) The benchmarks for assessing each program's objectives; (7) Activities required for the action planning; (8) A measure of activity in order to evaluate the results achieved; and (9) Institutions involved in the implementation of the program. There is a criteria element linkage in knowledge management [31], the interaction constraints in total quality management [32]; understand the elements of entrepreneurial constraints [33], the priority strategy [34], determine the critical success factors [30], also uses one element [35].

Several previous studies used the ISM with one element for the development of the institution's management business [36]; [37]; [38]; [39]; [40]; [41]. Development of the institutional system structure is also using a single element. The formulation of these structural elements is also based on pesantren problem situation for the development of dynamic capabilities of pesantren as a strategic effort to address institutional changes. Structural element for institutional development is related institutions elements. It includes sub-elements: (1) Pesantren; (2) Local Government; (3) The Ministry of Agriculture; (4) The Ministry of Religious Affairs; (5) The Ministry of Education and Culture; (6) The Ministry KUKM; (7) College / Institute for Research and Development; (8) Financing Institutions; (9) Koperasi Pesantren (Pesantren cooperative); (10) group of farmers; (11) Private Company; and (12) Non Governmental Organization. Sub elements are encoded by the symbol L.

Identification on expert respondents understanding on contextual relations among sub-elements institutions related on the management of agricultural resources in pesantren expressed by the symbol V, A, X, O (Table 1) forms a matrix, called structural self-interaction matrix (SSIM).

Tabel 1. *Structural Self Interaction Matrix* (SSIM)

Code	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
L1		A	A	A	A	A	A	A	O	V	A	A
L2			A	A	A	A	A	A	V	V	V	O
L3				X	A	A	A	A	V	V	O	O
L4					A	A	A	A	V	O	O	O
L5						X	X	A	O	O	O	O
L6							X	A	V	V	O	O
L7								A	V	V	V	O
L8									V	V	V	O
L9										V	A	O
L10											X	A
L11												O
L12												

The SSIM is converted into binary 1 and 0 to become an initial reachability matrix (initial reachability matrix) as shown in Table 2. Based on the analysis stage ISM, revision of SSIM with transitivity rules is done until the final reachability matrix is generated (Table 3). The matrix was used to determine the level of dependence (dependency) and *driver power* (power driver) of related institution elements.

Tabel 2. *Initial Reachability Matrix* (IRM)

Code	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
L1	1	0	0	0	0	0	0	0	0	1	0	0
L2	1	1	0	0	0	0	0	0	1	1	1	0
L3	1	1	1	1	0	0	0	0	1	1	0	0
L4	1	1	1	1	0	0	0	0	1	0	0	0
L5	1	1	1	1	1	1	1	0	0	0	0	0
L6	1	1	1	1	1	1	1	0	1	1	0	0
L7	1	1	1	1	1	1	1	0	1	1	1	0
L8	1	1	1	1	1	1	1	1	1	1	1	0
L9	0	0	0	0	0	0	0	0	1	1	0	0
L10	0	0	0	0	0	0	0	0	0	1	1	0
L11	1	0	0	0	0	0	0	0	1	1	1	0
L12	1	0	0	0	0	0	0	0	0	1	0	1

Table 3. *Final Reachability Matrix* (FRM)

Code	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	Drv
L1	1	0	0	0	0	0	0	0	1	1	1	0	**4**
L2	1	1	0	0	0	0	0	0	1	1	1	0	**5**
L3	1	1	1	1	0	0	0	0	1	1	1	0	**7**
L4	1	1	1	1	0	0	0	0	1	1	1	0	**7**
L5	1	1	1	1	1	1	1	0	1	1	1	0	**10**
L6	1	1	1	1	1	1	1	0	1	1	1	0	**10**
L7	1	1	1	1	1	1	1	0	1	1	1	0	**10**
L8	1	1	1	1	1	1	1	1	1	1	1	0	**11**
L9	1	0	0	0	0	0	0	0	1	1	1	0	**4**
L10	1	0	0	0	0	0	0	0	1	1	1	0	**4**
L11	1	0	0	0	0	0	0	0	1	1	1	0	**4**
L12	1	0	0	0	0	0	0	0	1	1	1	1	**5**
Dep	**12**	**7**	**6**	**6**	**4**	**4**	**4**	**1**	**12**	**12**	**12**	**1**	

Contextual relationships between sub-elements indicating support from relevant institutions, shows the results in ISM process (Table 3) that financial institutions have the highest power. These Sub-elements are very supporting related institution to encourage pesantren to manage agricultural resources effectively. Financial institutions such bank and non-bank are directly involved in pesantren's resources management, so they are still independence. Therefore, the sub-element is identified as its key sub-element.

The analysis results of the contextual relationship of each sub element identified four sub elements in the Independent quadrant (Figure 1). Sub element Financing Institutions (L8) has the greatest driving forces and their dependence on change is low, so it becomes a key sub element of related institutions. The role of financial institutions determines the success of the changes in pesantren institutions and related parties, such as *koperasi pesantren*, farmer groups and private companies as pesantren partner.

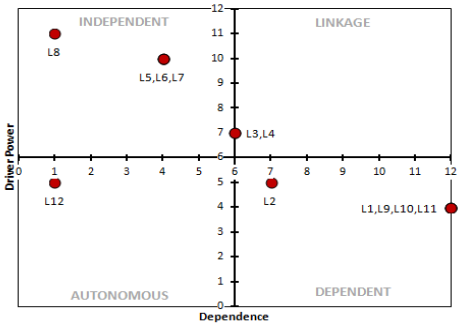

Figure 1. Diagram *driver power-dependence*

Figure 2 shows the hierarchical structure of institutions related with changes in pesantren institutions to achieve food sustainability. Pesantren as an institution that is independent and has the potential to manage resources through cooperative or other productive efforts is highly dependent on the source of financing. Support from financial institutions with particular scheme is needed to encourage educational activities and business management growing in pesantren. The spirit of independence certainly needs the support and the guarantee of the government. Government in accordance with the scope of duties and authorities does synergetic to jointly develop and promote pesantren. Ministry associated with pesantren encourages local governments to conduct coaching and mentoring to changes at pesantren, and make new breakthroughs to establish cooperation with universities or research institutes and development. With such institutional structures, the management of agricultural resources at pesantren can be managed systematically, complementary and not overlapping in the implementation of its action program. Therefore, a structured and effective institutional system is necessary needed.

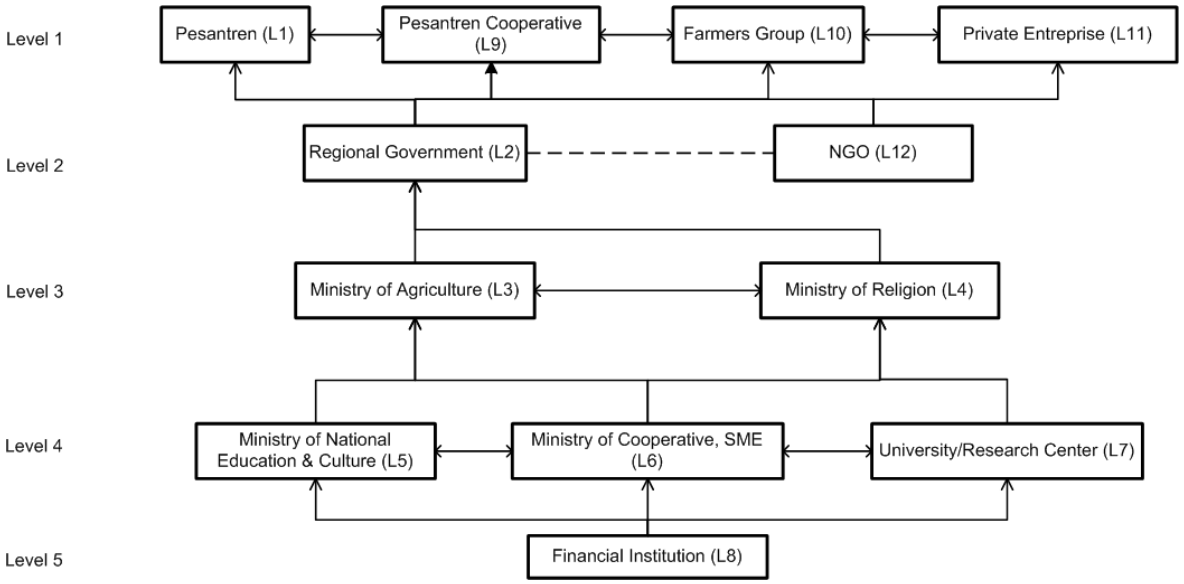

Figure 2. Hierarchical structure of related institutions

Institutional model of Agricultural Resources Management in Pesantren

Organizational change has become a real need for social institutions such pesantren. Demands on the development of the capability to learn the patterns, values and new employment strategies so that it can be transformed into organizational life that are better able to answer every challenge. The needs to transform pesantren are fundamental shift in the relationship between organizations, individuals and society as a whole. Transformation in pesantren is not just downsizing but implies more fundamental shift that is fundamentally against the values, work patterns, organizational culture and mindset in accordance with the organization demands for the globalization era.

Generic model of transformation process is built with a combination of the redesign and evolution implementation [42]. The model integrates a framework approach and methodology. Integrating emphasizes the essential elements that should be questioned, and define the order to be followed during implementation. The proposed model consists of eight elements or steps that can be classified into three stages: (1) strategic phase - the development of solutions; (2) the transition phase - adaptation; and (3) the operating phase - process-based organization. Furthermore, the phase transformation process in a certain way to explain the nature of certain elements or steps: (1) strategic analysis; (2) identifying the core business processes; (3) designing the core business processes; (4) the transitional on organization form; (5) the cultural development process; (6) developing support systems; (7) establishing a process mechanism; (8) continuous improvement.

Adjustment of the model concept and considering dimensions of bio-physical, structural and cultural in pesantren, then the transformation system built has two main processes: (1) the transitional forms of organization and (2) development of organizational culture. Transition process of organizational forms is done by the development of the function of pesantren to manage the potential agricultural resources (SDP) in order to achieve sustainability of its food. Therefore, institutional management SDP and its organizational culture are needed in order to be capable to be ideal pesantren to brighten community life.

The main process is developed into SDP management model that link the pesantren's bio-physical dimensions and structural. This means that pesantren performs optimal management to the resources embodied in the regulation of the organizational units, including the officers involved, the responsibility, regulation, infrastructure and supporting facilities. In accordance with the transition function, then institutional SDP management model is built to represent the linkage dimensions of pesantren bio-physical and cultural. This model becomes the application of the principles of conservation for the management of the SDP, with the spiritual values of the parties involved (stakeholders) and responsible. The implementation is supported by support systems and operating systems through the development of mechanisms of management

processes, control, training, education, awards or incentives and support for information systems.

Management efforts towards pesantren SDP require institutional arrangements framework within the healthy development. Pesantren SDP can not manage themselves, without involving or without the help of other parties. This condition is based on the fact that SDP management involves the dimensions of biophysical and norms and management regulations are on cultural dimension. Institutional management SDP is built with the aim that pesantren is managed based on the conservation principles.

Indonesian Law No. 5 of 1990 on Conservation of Natural Resources and Ecosystems explains that conservation is the preservation effort on natural resources and the environment that includes: (1) The protection of life support systems; (2) Preserving diversity of plants and animals and their ecosystems; and (3) sustainable utilization of natural resources and ecosystems. Definition of conservation is simplified into three principles: (1) secure, (2) learn, and (3) use. This conservation can be realized if the relationship among stakeholders is good, synergistic and coordinated [43].

Considering almost all pesantrens have a legal in the form of non-profit foundation as well as having their independence nature, then any activity that requires financing and making a profit cannot be done by the foundation. [44] is laying a sustainable balance between social and economic dimensions in social enterprises harmonized with non-profit company than the company for profit. At pesantren, the inclusive social enterprise is called 'perusahaan umat' (the people company), that is a business entity grounded by spiritual values in pesantren so that it supports life, especially for the mission of pesantren, especially social activities. This institution has the authority and discretion (autonomy) in carrying out economic activity in pesantren. Perusahaan umat is directed to manage pesantren's, SDP belongs to the alumni and SDP of surrounding communities.

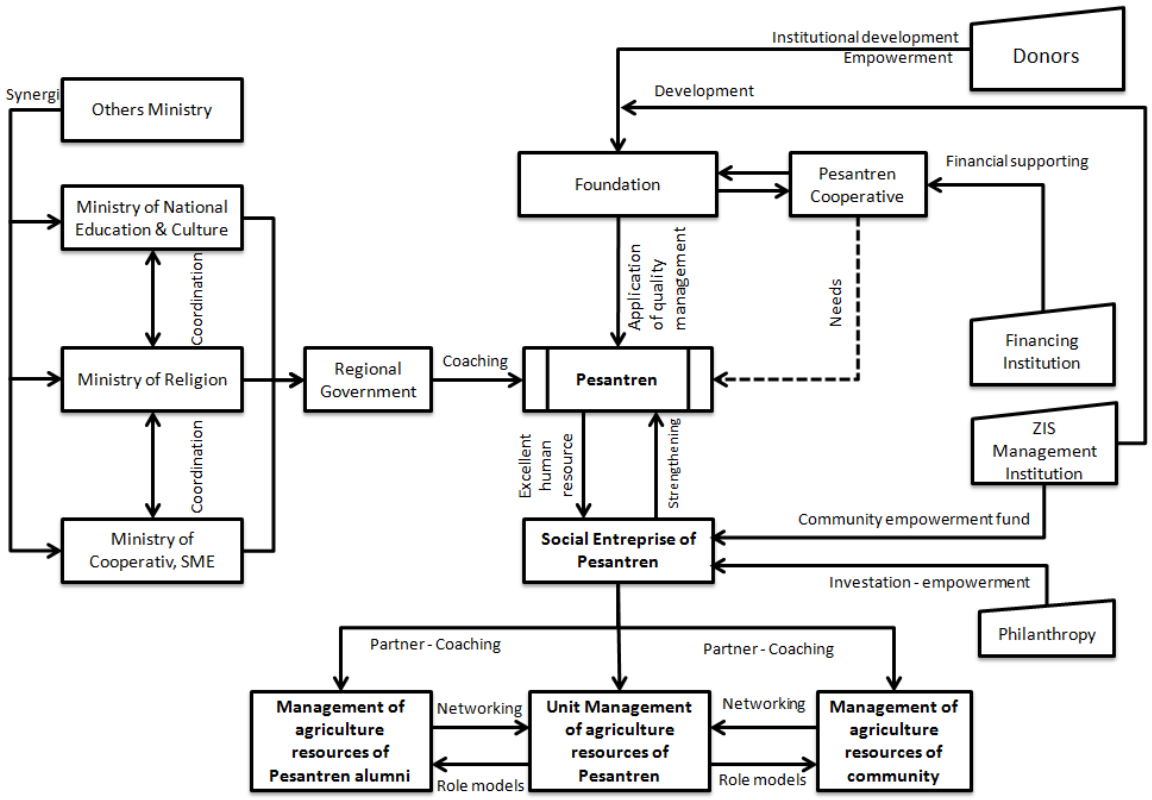

Figure 3. Institutional model of agricultural resources management

Technical ministries play a role through regulations and policies indirectly. This means that policies and regulations are passed down to local governments to be followed up with regional regulations that are more detailed and tailored to local needs. Local government can play a greater role in coaching, mentoring and supervision of schools in managing the SDP. The local government is also responsible for coordinating with relevant ministries in equipping pesantren

facilities that have a concern in the management of the SDP in a sustainable manner. Concern is realized in active solidarity, one will and the urge to be involved. Genuine concern requires the courage to be vulnerable and admit vulnerability themselves [45]. It is an encouragement of philanthropy as a source of financing to participate in driving the people company, so the purpose of administering the SDP retrievable is driving change for pesantren in the future.

According to the ISM results that the successful management of the SDP in pesantren depends on availability of financing efforts, both sourced from financial institutions such as banks and non bank such as ZIS management institution for the empowerment of the people.

Implementation Model Strategy

Pesantren change in long term requires a proper management of change strategy and supported by qualified human resources. The focus of the transformation of schools includes the management of the SDP, institutional, and institutionalization of pesantren spiritual values. Theory of constraints (TOC) is applied in the thinking process to find a solution [46]. Implementation models strategy as a solution can be constructed with a logical thinking process using Objective Intermediate Map (IOM). Based on the model, the focus of its transformation strategy are the pesantren commitment, conservation on SDP and SDP optimization.

The commitment requires the presence of pesantren's SDM correctly, that means not only physically present but also the soul. Pesantren commitment requires a sense of belonging and a high work ethic of the pesantren community. Moreover, it requires HR that feels part of the organization. Strategies undertaken to include: provision of wide opportunities, improving the competence of human resources, the selection of spiritual leadership figures, and the application of good morals.

Conservation on pesantren SDP can be realized by the application of SDP management principles, includes preservation, sustainable use, protection and conservation paradigm shift. Strategies undertaken for its achievements include: increased participation of all parties, building and keep consensus together, to communicate effectively, carry out proper environmental jurisprudence, brings spiritual leadership, and growing of the value of a high awareness of the principles of conservation [1].

Optimizing pesantren SDP will be achieved if planning is carried out and implemented correctly, supported with financing system that emphasizes the principles of justice, and supported the action program based on ecology. The strategy of achieving the optimization is: building the organizational structure according to their functions, developing indicators of success that can be measured and transparent, opening access to productive resources, the provision of financing schemes specifically, developing a vision and a clear mission, improving skills as needed, as well as provision of infrastructure and facilities that are good and decent.

Alternative strategies identified according these ideas need to be prioritized according to the criteria and possible implementation of policies related parties. Prioritization of alternative implementation strategies used MPE. Their selection criteria: (1) Support for policy; supports the policy of the interested parties, both government and pesantren; (2) accessibility; ease of executed by the parties concerned; (3) Prospective; have confidence it can be implemented in the future; (4) Multiple effect; has a dual effect on aspects of community life; and (5) Sustainability; confidence that it can be carried out continuously.

Based on the MPE analysis results, it is obtained five strategic priorities, namely (1) pesantren leadership cadre using spiritual leadership; (2) The development of pesantren vision and mission corresponding with new paradigm in food sustainability; (3) Increased community awareness; (4) Development of human resource competencies in pesantren; and (5) strengthening pesantren consensus with the relevant parties. Pesantren transformation is carried out by strengthening the institutional structure and paradigm shift to build a new vision of the future pesantren.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Pesantren as a social institution that has the potential to manage resources, through a cooperative effort or productive business is highly dependent on the support of financial institutions with a scheme in particular in order to promote the sustainability of educational activities and business management that grow up in pesantren.
2. The institutional model on management of agricultural resources is reinforced by

economic institutional community based on faith and good deeds that create a balance of material and spiritual well as the interests of the individual and society.

3. Strategy implementation model as a follow-up of the process of transforming pesantren for sustainability management of agricultural resources is formulated from the process of establishing commitment, understanding of the conservation of agricultural resources and the optimization of its resources. Priority strategies need to be implemented through the stages: renew, restructure, reframe, and revitalize according to the concept of transformation 4R, namely (1) Development of pesantren HR competencies; (2) pesantren leadership cadre with spiritual leadership; (3) Development of appropriate vision and mission of pesantren for new paradigm in food sustainability; (4) Development of productive enterprise with inclusive business; (5) The establishment of an organizational structure that is appropriate to its function.

Suggestion

Suggestions that need to be followed up based on the study results and implementation strategies:

1. The institutional model that has been developed need to be implemented by pesantren in accordance with the stages of transformation and renewal paradigm until the establishment of action programs implemented as a habit.
2. Pesantren needs to pay attention towards the transformation to be a future pesantren that includes improvement on mindset, vision, work ethic, application value, regulation, function of leadership, management, human resource competencies, networking and financing. Pesantren also needs to involve the local community and guardians of students in thier program.
3. The government needs to build an integrated agricultural civilization among the people, especially the rural population initially to apply the model of ideal pesantren that have been formulated in this study as centers of agriculture.

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