

# A Review on the Development Strategies of Agro-industrial Institutions in Indonesia

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**ABSTRACT**— *The importance of agro-industrial development is deeply associated to necessity for development of agriculture-based economic activities. An alternative model and an institutional model selected should consider the innovation taken, feasibility, the lowest cost, the lowest possible consequences or risks. This article was aimed to describe strategies for development of agro-industrial institutions and some other opportunities for novelty as a research contribution. Results of the analysis discovered some research opportunities that become challenges for researchers, in particular in the context of wide open agro-industries. They include ones related to the historical analysis, the comparative analysis and the functional analysis, the assessment of institutional positions, the structurization of institutional systems, future prospects, the assessment of potential innovations and the institutional performance measurement. In-depth review of one component or in depth-study of a combination of components is continuously required. Therefore, characteristics of each agricultural commodity, social dynamics, current development and technological advances, policy changes and global challenges become challenges crucial for development of agro-industrial institutions in the future.*

**Keywords**— Strategy, Development, Institutions, Agro-industry, Indonesia.

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## 1. INTRODUCTION

Agro-industry is an industry processing for agricultural products (plants and animals) including a process of physical and chemical transformation, storage, packaging and distribution [1]. Sukardi [2] argued that an agro-industry is an industry producing products whose main materials are derived from plants and animals. Those main materials could be recognized from the importance of them characterizing their products instead of merely their quantities in the products. Thus, agro-industries are an extension of agriculture as a whole.

Agro-industry development is able to promote the more stable and profitable agriculture, which includes providing ample employment opportunities ranging from the manufacturing to the marketing processes. The wider development of agro-industrial products would improve the physical infrastructures (buildings and tools) so as automatically encouraging better development in agricultural diversification and commercialization that surely increases revenues and welfare and achieves food security eventually.

Generally in Indonesia, agro-industries belong to household, small and medium scale enterprises thereby being categorized into criteria of small and medium enterprise (SME) development in the context of autonomous regional development and community empowerment. This is in accordance to their characteristics and types, i.e.: (1) based on local resources thereby being able to maximally utilize the existing potentials self-sufficiency, (2) owned and run by local communities thereby being able to evolve human resources, (3) implementing local technologies thereby being able to be conducted and developed by the local power, and spread in a large amount so that becoming an effective equitable development means [3].

Agro-industries commonly are categorized into 3 types, including:

- a. Household Industry (HI): this is owned and run by a household or some at the rural level accompanied with very low capital investment and manually high performance.
- b. Small-Scale Industry (SSI): this industry is larger than the household industry, in which there is a more increase in investment. Work activities are already considered semi-automatic accompanied with the small and simple management.
- c. Medium-Scale Industry (MSI): an industry holding higher investment, both machines and tools and resources (human and raw material). Work activities are mostly automatic and the management is already established with different functions and people in charges in certain units.
- d. Large Scale Industry (LSI): this industry holds an extremely high investment with also a high automation level. Performance management has already been systematically managed through different functions intertwined structurally and functionally.

Agro-industries play a vital role in encouraging economic growth and development that contribute to the national economy [1, 4, 5]. There are at least four powers of agro-industries as follows:

1. Agro-industry is a solution for agricultural products which means that agricultural products need processing up to a certain level in order to generate the added values.
2. Agro-industry is a main supporting factor of the manufacturing sector which means that agricultural resources are highly required in the first stages of industrialization and agro-industries. Therefore, this becomes the greatest opportunity for providing employment opportunities, enhancing production, marketing and developing financial and service institutions.
3. Agro-industry contributes to increasing the foreign exchange which means that there is a demand for agricultural products in the global market, in the form of raw, semi-finished materials or finished products thus needing appropriate processing that meets the customer (consumer) demand.
4. Agro-industry makes up the dimension of nutrition which means that agro-industries could be suppliers of community nutritional needs and national compliance of needs for foods.

The importance of agro-industrial development is closely related to the necessity of agriculture-based economic activity development (contribute to gross regional domestic product (GDRP), workforce absorption, creating small-medium entrepreneurs, attracting investors and the foreign exchange) [6-9].

Given that agro-industries function as one pillar of the Indonesia's economic system nowadays, the presence becomes very strategic. However, in fact, it seems that the national agro-industrial system has not shown a good performance. Moreover, Maarif [20] asserted that the institutional performance of national agro-industries and agribusiness is not optimal. He considered that the agro-industry and agribusiness growth in Indonesia is more affected by underlying external conditions allowing the sectors to evolve continuously. The elemental problems appear from two things. First, the development of the agro-industrial and agribusiness system was not performed from the integrated internal factors. Second, the process of growth and alteration in the agro-industrial and agribusiness system is not managed well (professionally). These two matters grow into the main causes of development delay of the agro-industrial and agribusiness system in Indonesia. As a consequence, in-depth reviews related to the internal factors, particularly institutions as organizations and the human resource capacity become essential to holistically be studied by taking different actors incorporated into account.

As a leading sector, the agro-industry is remarkably bolstered up by capabilities and skills of the actors coming from different sub-systems in conducting their respective roles, including commitment to cooperatively developing all of the agro-industrial sub-systems. All components of the agro-industrial sub-systems including organizations, management, mechanisms, systems and procedures originating from production systems, post-harvest handling to marketing and distribution, should be able to carry out their mission, not only in partially performing the functions, but also in harmonization of integral agro-industrial development [10]. Siregar [4] clarified that the industry sector is expected to be a driving force in the national economic development since this sector possesses the strong structure of attachment and depth as well as sustainable competitiveness and is perceived to be tough in the international market. According to the Department of Industrialization, Republic of Indonesia, one of industries whose development would be prioritized in the future is the agro-based industries (agro-industries), as they have characteristics of sustainable industries resulted from their increasing reliance on knowledgeable and skilled human resources, renewable natural resources and technological mastery. Indriati [11] was convinced that knowledgeable and skilled human resources have an essential role in achieving success, since the sophisticated and complete facilities are not possibly a guarantee that an organization would achieve success unless they are offset by the quality of human resources able to utilize those facilities. Therefore, individuals involved in a business may affect its success.

Austin [1], Brown [12] and Nasution [8] argued that some troubles in developing agro-industries are: (1) biophysical resources (water, land, production, the quantity and quality of raw materials), (2) the quality of human resources, (3)

institutions, (4) the technological application, (5) supporting systems (policies, investment, infrastructures, capital, market information, the belonging status). Thus, as reported by Gouillart and Kelly [13], revitalization in an industry is a must in order to promote organizational growth by linking and harmonizing the organization to the environment. Revitalization requires the execution of three matters, i.e.: achieving market focus, discovering new businesses, altering regulations through the information technology and the application of revitalization on agribusiness institutions [10]. Anderson and Anderson [14] described that transformation functioning as the fundamental change of a condition towards another is needed so as the significant cultural, behavioral, and mindset changes are also demanded for the purpose of appropriate and continuous execution over time. Organizational and institutional changes may occur in structures, technologies and people [15], while as stated by Robbins [16], strategies of human intervention, structures, technologies and organizational processes are truly necessary for implementing a transformation in an organization.

Agro-industrial institutions are the formal and non-formal devices controlling behavioral rules and are able to facilitate the coordination establishment or regulating relationship of interaction among individuals. Community sets behavioral rules to the individuals for the purpose that they do not threat/ harm sustainability of the entire community life. An example of institutions mentioned is that of the goods and service exchange through a market economy or a non-market institution commonly found in rural areas such as profit sharing or lease or use rights, in which the profit sharing is set by a mutual agreement [17].

Nasution [8] defined an institution as a place and norm of an institution considered as an organization, accompanied with a set of regulation, procedures, individual behavior whose meaning is important for agricultural development as well as for regulating relationship between each other. Whereas Walker, Arkadie, Robbins [18, 19, 16] defined an institution or organization as a group of people consciously gathering with a relatively identifiable border and working together to achieve goals. In addition, Gibson et al. [20] clarified an organization is a unity that allows people to reach certain goals impossible to attain by individuals.

This article was aimed at describing developing strategies of agro-industrial institutions and some other opportunities of novelty as a research contribution. To outline, we divided them into 7 different sections of discussion comprising (1) introduction, (2) the terminology of institution, (3) the institutional study and its classification, (4) the agro-industrial model and institutional scheme, (5) strategies, research, and institutional analyses, (6) the prospect of institutional research, as well as (7) conclusion.

## **2. THE TERMINOLOGY OF INSTITUTION**

Based on some definitions or explanations of the term institution, it is indicated that experts, academicians and policy makers frequently use different terms institution, however sometimes containing the same meaning. In the analysis conducted by Syahyuti [21], it is reported that either the term of “institution” in English literatures or that in Indonesian tends to be not consistent and the same description from experts is not gained, including the term “organization”. Some references show that the use of this term of institution has different assumptions and is discordant [16, 22-33].

The use of certain term or terminology in describing a particular thing often results in a lot of significances, meaning and inhomogeneous or different purposes. This is what genuinely happens in defining the term of institution or organization. An institution may be known interchangeably as either the place or the important system, and in the same way an organization may be known interchangeably as either the group or the system.

Some scientists sometimes unconsciously used the term of “institution” for “organization”, vice versa. North [28] widely known as institutional economics and so as Scott [22] introduced the theory of new institutionalism, often combining terms of organization and institution, although sometimes they are separated. Mitchell [34] sometimes also used only the term of organization or only that of institution. Therefore, in our humble opinion, this is the elementary problem for the authors seeming not exactly considered terms used. Overall differences between institution and organization according to different scholars are shown in Table 1.

The definitions of institution above show that the main role of institution is for diminishing irregularity by determining a stable structure for the human interaction. Considering its strategic position, the role of institution in efforts to accelerate development in the agro-industrial sector, in the simplest sense, it could be said that if an agro-industrial institution favored by individuals is able to harmonize and synergize the knowledge with an excellent capacity commencing from steps of preparation, organizing, implementation and sustainable evaluation, the people’s agro-industrial development would be easier to execute [35-39].

In applying terms institution and organization all everything related to them generally originates from two things, scientists and policy makers. Both of them are also recognized as actors playing essential roles in establishing understanding on the definition of terms above, thereby being presented in the form of academic documents and policy

guidance. In other words, it would implicate in policy implementation and objects of their targets. Certain definitions extremely lead to the accomplishment of aspired goals and targets.

**Table 1:** Differences between institution and organization

No	Institution	Organization	References
1	Traditional	Modern	[23]
2	Fellows	Members	[23]
3	Local	Inter-regional or inter-area	[23]
4	Bottom up	Top down	[23]
5	An institution is not necessarily an organization	An organization is an institution not yet institutionalized	[40]
6	An institutional is not a part of an organization	An organization is a part of an institutional	[25, 40]
7	An institutional is broad and diffuse	An organization is narrow and firm	[21]
8	Rule of game	The players	[28]
9	Comprising institutional arrangements (an integration between organization and institution)	Actors or economic players in the contract or transaction	[41]

Institutional concept already evolved from time to time is necessarily evaluated continually to come closer to the aspired goals. The clarity of targets and purposes of objects that would be developed are profoundly important for the targets set. The redefinition of institution and organization through an analysis conducted by the process of backward tracking and the need for goal clarity now and forward is exactly possible for providing the better way of understanding in the developmental actions that would be performed. This process requires consistency from different parties in translating the directed purposes above in different dissemination media used. Thus, we suggest every researcher (scholar) and policy maker to better describe formerly the purposes and terms before spelling out all everything related to an institution so as the same understanding would be better established and in reverse the misunderstanding would be minimalized.

### 3. THE INSTITUTIONAL STUDY

The institutional science evolves from the basis of social and cultural sciences. Syahyuti [21] confirmed that an understanding of the institutional science generally is based on its two aspects (called as the institutional aspects), while the sociological science particularly that related to groups contributes to static aspects of the institution.

On the basis of the sociological science, particularly the sociological study of groups, there are two entryways to study an institution [30]:

1. The Cultural Study: concerning aspects of values and norms, so as the institution is described as a set of norms realized into the interpersonal relationship. The norm system belongs to cultural elements, or belongs to basic elements in the social life. The norms formed over time would be preserved if their benefits are gained. Norms have different binding affinities and impose also different social sanctions once they are violated. The pillar of norms is as illustrated in Figure 1.
2. The Sociological Study of Groups: social groups such as family, rural society, urban society, nation and others. Some experts divided them by their individual views. George Simmel divided them by the number of members, individual influences on the groups and social interactions in the groups. F Stuart Chapin classified them into the primary group (simple) and the secondary group (large). Ferdinand Tonnies divided them by the degree of interest between communities with a general interest and that with a specific interest. He split them into the *gemeinschaft* (community) whose members share pure, natural and eternal ties and *gesselschaft* (society) whose members are born with ties principal for a short period of time. Some also divided into the crowd characterized by a short period of time and the community characterized by the longer period of time.

Overall the classification of institutions is as presented by Koentjaraningrat [42] classifying types of institution growing in the midst of society into the seven different elements (Figure 2). Refers to the seven institutional elements below, seems that the agricultural institution (including agro-industrial institution) constitutes an economic institution.

The agricultural institution as a part of the economic institution differs from the mainstream economic sector which has evolved beforehand. Initially the mainstream economics grew as a form of materialistic economics with a close system. Along with the development and alteration of social relationship dynamics, the mainstream economics is becoming abandoned and change to the institutional economics more idealistic, transactional and open. Differences

between neoclassical economic models (mainstream economics) and the institutional economics is shown in Table 2.

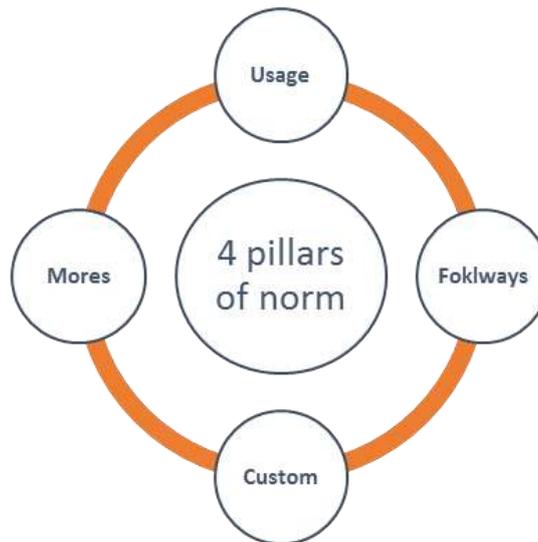


Figure 1: A pillar of institutional norms in a cultural approach



Figure 2: Classification of institutions present in society

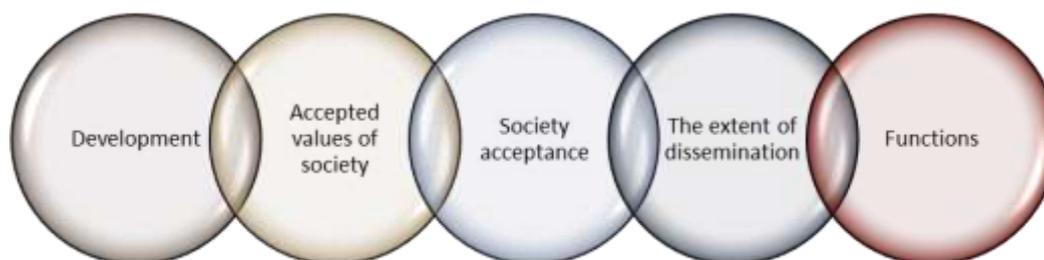
In the agricultural sector, specifically, the purpose of institution conforming to the argument of scholars arises with a wide range of versions commencing from the simple to the most complex. Several types of the evolving agricultural institutions are (1) institutions depending on collective activities (Figure 3) [43], (2) institutions depending on orientations, service purposes and membership types (Figure 4) [23], (3) institutions depending on agribusiness structures (Figure 5) [21], and (4) institutions depending on functions performed (Figure 6) [44].

#### 4. DEVELOPMENT OF AGRO-INDUSTRIAL INSTITUTIONS IN INDONESIA

One characteristic of agro-industries in Indonesia is mostly operating in the relatively small scales in which they are spread, massive, accompanied with resources scattered separately leading to distinctive problems to effectively organize and synergize them [5]. In practice thus far, the agro-industrial institutions are established through cultural and structural approaches. The cultural approach is a process of independently establishing an institution as will grow itself following needs and interest for engaging relationship over different interests. This approach commonly rises and grows from bottom to top, whereas the structural approach is an approach built on interest of certain institutions or an implementation of certain programs. Generally, this approach is formed under the assistance of a certain development program of government.

**Table 2:** Differences between models of neoclassical economic (mainstream) and the institutional economics [45]

Element	Neoclassical Economics	Institutional Economics
Approach	Materialistic	Idealistic
Observation unit	Commodity and price	Transaction
Relation to social sciences	Self interest	Self and other-interest
Value concept	Economics only	Almost all social sciences
Economic concept	Value in exchange	Value in usage
Philosophy	Similar to natural sciences	Cultural approach
Social behavior	Believes in free-will	Behaviorist
Postulate	Balance	Imbalance
Focus	Particularism	Holism
Scientific method	Almost certainly positive	Mostly normative
Data	Mostly quantitative	Mostly qualitative
System	Closed	Open
Econometric	Well used	Not/ sometimes used
Economic vision	Tends to be static	Tends to be more dynamic
Role	Provides choices	Recommends
Attitude to collective activities	Resistant	Unavoidable
Public figures	Adam Smith, Alfred Marshal	Thorstein Veblen, John R Commons



**Figure 3:** Institutions depending on collective activities



**Figure 4:** Institutions depending on orientations, service purposes and membership properties

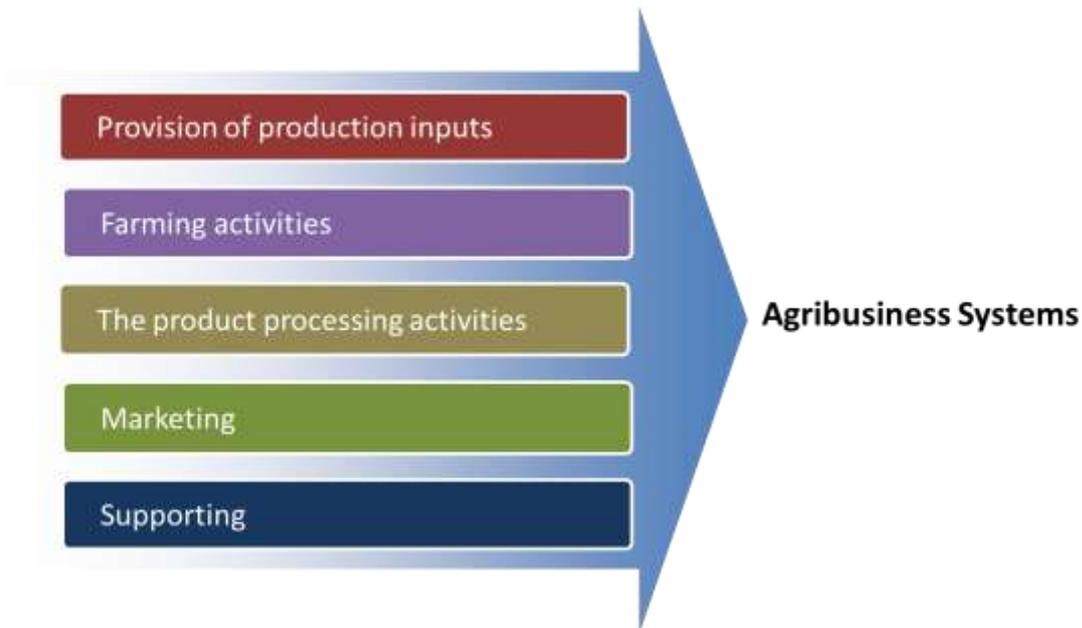


Figure 5: Institutions in agribusiness systems

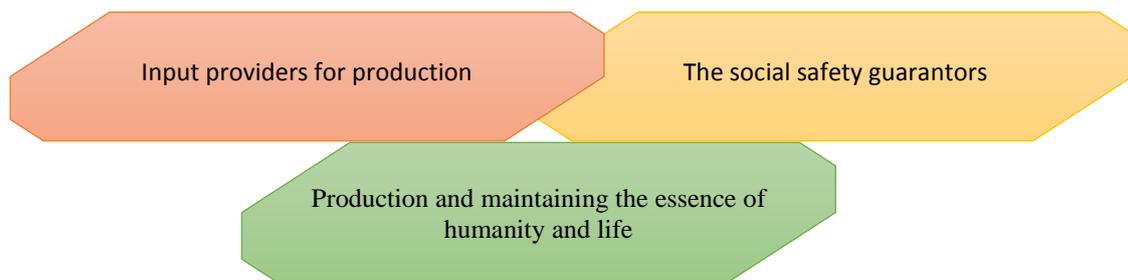


Figure 6: Institutions depending on functions performed

Pursuant to Syahyuti [21] thus far the government pays less attention to the institutional development naturally growing from certain values and norms evolving in society. Moreover, sometimes existing institutions whose benefits are perceived by society for years are removed and altered by the new system for the purpose of homogeneity and easy control. Nevertheless, the fact is that the new institutional system is not completely able to be optimally and properly implemented, due to a range of approaches that sometimes do not respect the indigenous knowledge. On the other side, evolving institutions are rarely explored or set as entryways functioning as a social asset to be developed and improved [21, 46-49]. The in-depth study concerning structural and cultural institutional systems evolving in society nowadays indeed becomes an initial entryway for further investigations. Accordingly, various models for institutional development through either the cultural or structural approach would be gained, including strategies of how to dynamically integrate both of them.

## 5. AGRO-INDUSTRIAL INSTITUTIONAL MODELS AND SCHEMES

Agro-industrial institutions are an essential facility in developing certain economic activities. In this case, institutions are required to organize all resources owned by an agro-industry in order to achieve goals and development better and altogether. A scheme or institutional model selected has its distinctive position in the present institutional dynamics. Nehnevajsa [50] clarified that in order to decide an alternative of institutional schemes that would be executed, innovations taken, feasibility, the lowest costs and the lowest possible consequences or risks should be taken into account.

Budi [51] and Nasution [8] outlined several evolving models and institutional schemes in Indonesia, among others, as follows:

1. **The strategic alliance**, constituting a form of economic institutions regulating collaboration between two or more businessmen in achieving mutual goals in the long period of time through a combination of resources and synergic competition while retaining the entity of each business man. In the strategic alliance, there are processes of value generation and equalization of business actors in the alliance that would create three important aspects, i.e. 1) a capability to compete through coordination, 2) synergy of specific resources, and 3) gaining competence through internal learning.
2. **Partnership**, constituting a business strategy undertaken by either both two parties or more in a certain course of time in order to reach mutual profits on the principle of mutual needs and mutual raising. There are three partnership schemes belonging to the alternative comprising the plasma-core partnership scheme, the general trade partnership scheme and the agribusiness operational coordination partnership scheme.
3. **The plasma-core partnership scheme**, constituting the partnership scheme among farmers/ farmer groups or partner groups functioning as plasma and the core companies engaging business partnership. The core companies provide land, production facilities, technical and managerial guidance, accommodate, process and market the products resulted. The core companies remain manufacturing needs of them, while the business partner groups meet needs of the companies as terms and conditions mutually agreed.
4. **The general trade partnership scheme**, constituting a business relationship scheme in the product marketing between marketing companies and business groups supplying needs required by the marketing companies.
5. **Agribusiness operational coordination partnership scheme**, constituting a business relationship scheme, in which partner groups provide land, facilities and workforces, while partner companies provide funding, capital, management and provision of production facilities to operate the business of or to culture certain agricultural commodities.
6. **The agro-industrial cooperative scheme**, constituting a cooperative engaging in the field of economics, notably in the field of agro-industry, to fulfill needs and improve the welfare of their members. Agro-industrial cooperatives have functions and play roles in establishing and developing potentials and economic capabilities of the members in particular, and society in general, to increase the economic and social welfare, enhancing human and social qualities, strengthen people's economy as a basis for the strength and resilience of the national economy in which cooperatives play a role as the main pillar, and continuously strive to realize and develop the national economy above which is a joint effort based on family principles and economic democracy.
7. **The business group scheme**, constituting a group of organized agro-industries that carries out a part of industrial activities. The basic principle of this business is to synergize small powers from the industry to become a larger power. The business group would be able to raise the bargaining position of small industries as technically and economically they produce more efficiently.
8. **The networking scheme**, constituting a type of cooperative relationship among groups interrelated and integrated and working together in a particular field. The business networking scheme conducts cooperative relationship and the power synergy among others on the principle of equal partnership. Through this business networking, agro-industrial units synergize the power and mutually cover their individual weakness in order to attain a profitable business goal.
9. **The independent business**, constituting an agro-industrial business conducted without engaging formal ties with other agro-industries or groups. The agro-industrial independent business activities are performed as distinctive unite, therefore all of the raw material provision, production processes, packaging and marketing are sought by the small industries themselves.

## **6. STRATEGIES, RESEARCH AND INSTITUTIONAL ANALYSIS**

Institutions extremely function as a place for socializing new members, maintaining social order, preparing social roles and others related to occupations (positions), preserving ethical and moral principles as well as controlling production and distribution of goods and services. These institutional functions are profound for accommodating social activities and even for production, including in the relation to the agricultural field. Thus, numerous strategies, research and institutional analysis are essential to be learnt in order that the established and developing institutional systems today become more effective and efficient in achieving purposes for social welfare.

Gibson et al. [20] explained several criteria to assess the effectiveness of an institution as follows:

1. Production, the capability to produce the number and qualities of products required by surroundings,
2. Time taken,
3. Satisfaction, a measure indicating the level in which institutions meet needs of the members,
4. Adaptability, able and truly responsive to the internal and external changes, and
5. Development, measuring capability to enhance capacity in dealing with environmental demands.

The Gibson's argument becomes one measure of how institutions grow as a profound pillar through comprehensive and in-depth studies. Strategies, research and institutional analyses are built from the cross-knowledge thought and multidisciplinary science thereby engendering a multi-methodology in the studies undertaken. This is because ultimately

institutions are not merely groups of people, but they comprise and are encompassed by various social, cultural and economic aspects. In this work, we present some evolving strategies, research and institutional analyses able to be chances for subsequent studies.

### **6.1 The Historical Analysis, the Comparative Analysis and the Functional Analysis**

Among the modest approaches of the institutional study is that through the historical analysis, the comparative analysis and the functional analysis. These three analyses in most cases are conducted with descriptive methods trying to interpret what already existing, whether they are conditions or relationships, opinions, ongoing processes, causes, effects occurring and underlying tendencies.

The historical analysis is performed by outlining processes commencing from the establishment history of institutions, both naturally and due to certain policies so that evolve continually with different peculiarities. This includes studying institutions that had existed, have existed or seeing the future through past institutional history. The historical analysis is aimed to reconstruct institutions of the past systematically and objectively through processes of collecting, evaluating, verifying and synthesizing evidences so that facts as substance to draw conclusion are explained.

The comparative analysis is aimed at analysis through comparing condition of a certain institution to numerous types of the evolving institutions in society. This comparison may be conducted between one type of institutions and others, or among some other institutional types at a time. In the agricultural context, diverse agricultural commodities or institutions growing interareally and intererigonally may also be subjected to the comparative study. The comparative study is carried out on the basis of certain conceptual frameworks by facilitating diverse facts and properties of institutional objects studied. The comparison between two or more existing institutional types is undertaken to find out similarities and differences that allow their development.

Furthermore, the functional analysis is a means to analyze relationship among numerous parts in the institutional systems studied. This analysis may be conducted through the two approached previously mentioned, the historical approach and the comparative approach, however they put forward the perspective of functionality.

### **6.2 The Assessment of Institutional Positions**

An institution has certain positional condition in the existing agro-industrial systems. As a result, to execute processes of institutional development, the current prevailing institutions in a community or organization should be formerly analyzed whether the prevailing institutional systems need assistance, facilitation or promotion [28]. After the latest condition analysis of existing institutions is undertaken, decisions concerning the plan of methods that would be applied in the institutional development are reached.

### **6.3 Structuration and Structurization of Institutional System**

Structuration and structurization are social mapping models employed in analyzing evolving institutions. The structuration theory was developed by Anthony Giddens through his work *New Rules of Sociological Method* [52]. Further, Giddens elaborated his theory into three books published consecutively, i.e.: *Central Problems in Social Theory* [53], *A Contemporary Critique of Historical Materialism* [54] and *The Constitution of Society* [55].

Pursuant to Achmad [56], one of main proportions of the structuration theory he developed is regulations and resources used in producing and reproducing social actions and at once is a means of system reproduction (structure dualism). What meant by the structure dualism is the recurrent basic principles of social life, as what embedded and reflected in social practices: a structure is a facility and also a result of practical reproduction. The structure comes simultaneously into the constitution of actors and social practices, as well as is “present” in moments of the constitution generation. In this case, Giddens did not call it as an institution but as a constitution of actors and social practices. This Giddens’ idea was widely criticized by many scientists such as [57-61] due to weaknesses of the theoretical analysis he developed. Thus in this present analysis we tend to employ a structurization model [62] more applicative to institutional systems comparing to the Giddens’ structuration theory.

The institutional structurization model is one strategy in institutional research and analysis applied. One method commonly used in the analysis of institutional structurization is an approach developed by Saxena [62] through the Interpretative Structural Modeling. This method is a group learning process in which the institutional structural models are generated in order to illustrate complex things from a particular state of institutional models through schemes designed systematically using graphs and sentences [63]. The Interpretative Structural Modeling (ISM) is one of the modeling techniques for the purpose of dealing with the unchangeable habit, directly implementing a technique of operational research and or the application of descriptive statistics [64].

Conforming to Kanungo and Bhatnagar [65], the ISM method is able to be employed in order to develop some structural types, including the structure of effects (support or neglect), the structure of priorities (“more important than”

or “better to be studied beforehand”) and categorization of ideas (such as “included in the same category as”).

The structurization of institutional development consists of data of developmental elements, data of institutional developmental structurization sub-elements and data of contextual relationship. Data of developmental elements describes elements present in the structurization system of agro-industrial institutional development, while the sub-element data describes sub-elements present in each of elements above. The data of contextual relationship assessment consists of contextual relationship among sub-elements in each of developmental structurization elements. The data is used as basis data in the selection sub-models of business institutions and structurization of institutional development.

Selection results of agro-industrial institutional development strategies make up the main priority of the selected alternative institution then are subjected to structurization of institutional development systems. As reported by Saxena [62] the structurization program of institutional development could be analyzed on the basis of nine elements, including:

1. The element of purposes
2. The element of needs
3. The element of main constraints
4. The element of success barometers
5. The element of institutions incorporated in the implementation
6. The element of affected community sectors
7. The element of possible changes
8. The element of activities required in action implementation, and
9. The element of activity measures for evaluating results reached by every activity

Some other types of elements that may also be applied are as what presented by Sharma [66], i.e.:

1. The element of purpose statements
2. The element of proposed programs or options
3. The element of economic parameters
4. The element of assistance barometers
5. The element of values
6. The element of problems, opportunities and causes, and
7. The element of activities, events

Some of institutional studies applying the ISM approach are that conducted by Budi et al. [67], Jaya et al. [68], Panackal and Singh [69], Pandi et al. [70], Murtadlo and Utomo [71], Forstater [72], Hsu et al. [73].

#### 6.4 The Prospective Analysis

The prospective analysis is one of techniques used for analyzing numerous strategies that are seemingly implemented in the future relying on conditions occurring today (Figure 7). The prospective analysis is certainly useful for preparing strategic steps and considering whether changes are demanded in the following years [74]. Through the prospective analysis, an amount of information regarding key factors and what purpose strategies playing a role in agro-industrial institutional development in accordance with stakeholders’ needs incorporated in the future utilization would be obtained. Next, key factors and the strategy purposes (needs) are employed to define and describe the evolution of future possibilities for agro-industrial institutional development.

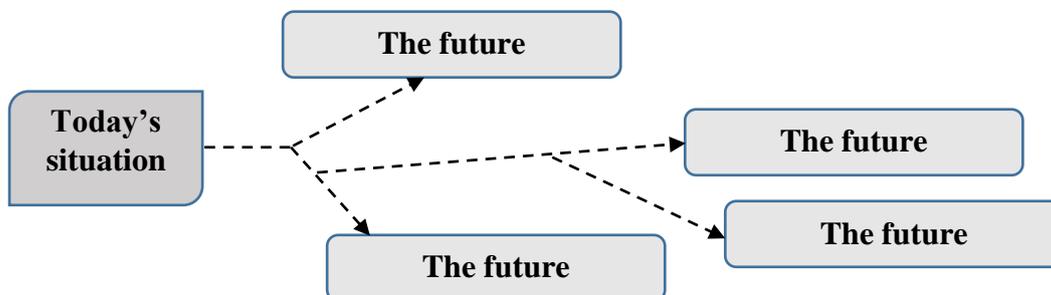


Figure 7: The future scenario in the prospective analysis

The prospective analysis is undertaken to predict numerous possibilities that may happen in the subsequent years. The prospective analysis is not similar to forecasting as from the prospective analysis alternatives that may happen in the future are able to be predicted both they are positive (expected) and negative (not expected). Utility of the prospective

analysis is to: (1) preparing strategic actions essential to perform, (2) determining strategic purposes and importance of main actors, and (3) defining and describing an evolution of future possibilities [75, 76]. On the other hand, the process of defining planned changes that may be feasible in the future is carried out by identifying how the key element changes are, then examine what alterations that simultaneously may occur (the combination of factors and conditions) and followed by describing the scenario by incorporating alterations that may happen [77]. The prospective analysis is absolutely appropriate for constructing policy strategies [78, 79].

### **6.5 The Assessment of Potential Innovations**

The most relevant concept of regional development in the 21st century is that through the development concept on the basis of technologies and innovations whose one of the indicators is the capability of human resources. Technologies and innovations constitute the main strength for occurrence of efficiency in the agricultural area appearing from the comparison between inputs and outputs [80, 81]. One type of the intervention in alteration of communities and companies is the transfer process in which an innovation diffusion process is communicated through several channels in a course of time and in a certain system. By the presence of a diffusion innovation, an innovation adoption is expected to occur along with capability to adopt the innovation introduced [82]. The process of decision making of the innovation is a process in which an individual gain the initial knowledge from the innovation process, to form attitudes towards the innovation, reach a decision to adopt or refuse, the implementation of new ideas and confirms decisions that would be implemented.

The systematic information management is a main promoter to encourage competitiveness of small and medium industries. The success in realizing visions and innovation strategies in business practices under the existing conditions is critical in the relation with innovation activities [83, 84]. The MERIT center (Maastricht Economic and social Research and training centre on Innovation and Technology) published a study of innovations in European Union member countries [85]. Nevertheless, most of research and literatures are focused on companies as an innovation generator. Every company has potentials to be creative and innovative. As stated by Goffin and Mitchell [86], the innovation key is an alteration of business environment, increased competition and new technologies.

In practice, nowadays the innovation studies are focused on the innovation assessment or the innovation audits and the management innovation. In the process of constructing strategies of alteration, it is essential that the top management is accustomed to them by accentuating competitive excellence of companies in the area of innovation. Consequently, an innovation is not only about generating creative business ideas, but also concerning more deeply the ideas by identifying people possible to become successful innovators. Unfortunately, there are numerous companies making mistakes in refusing potential innovative ideas and supporting other less innovative ideas instead [87].

An assessment of innovation potentials is necessary for sustainability of an industry. Accordingly, numerous studies have grown with different methods to discover ways to measure the level of innovation potentials. Some research regarding innovation potentials include the Innovation Potential Matrix [83], the evaluation of innovation potentials through measurement of innovation behaviors in Indian organizations [88], the assessment of innovation potentials in development of business environment in Russian areas [80, 90], strengthening values of innovation potentials through industrial orientations in Taiwan [91], the evaluation of agricultural ideas [87], the concept of service innovations in United States [92], the identification of high potential innovations and innovators in the field of information, communication and technology, competition programs and innovation frameworks, as well as the European Union 2020 horizon [93], a map of the company innovation potentials [94] and the assessment of companies' innovation in Romania [95].

### **6.6 The Assessment of Performance Measurement**

The institutional performance mostly is observed in three main aspects, they are institutional effectiveness, institutional efficiency and sustainability of the established institutions. The institutional effectiveness bears the meaning that the institutions are able to fulfill or reach the expected purposes. Institutional efficiency is associated to utilization of owned resources. Furthermore, sustainability of institutions is how the institutions are relatively conducive to maintain relationship and continuity by considering effectiveness and efficiency applicable therein. Therefore, measurement of the institutional performance becomes one of strategic parameters to ensure that the established institutions are considerably useful for parties incorporated in those established systems. Consequently, the performance management becomes one of managerial concepts essential in the institutional performance systems.

Some scientific arguments regarding measurement of the institutional performance are illustrated as follows. Aguinis [96] argued that performance measurement is a process to identify, measure, develop performance of both individuals and teams as well as align with strategic purposes that would be reached. Noe et al. [97] stated that managers from the entire management are duty bond to ensure employees' activities and outputs are congruent with expected purposes. In addition, Hannay [98] explained that performance measurement is an important activity which is the responsibility of a

manager to train, guide, motivate and show appreciation so that employees serve with the best performance. Therefore, it can be concluded from several arguments above that performance measurement is a process or a set of processes to create mutual understanding of what should be achieved and how they should be reached, as well as how to manage people in appropriate ways thus increasing the possibility of goal achievement [99].

Moreover, Petterson et al. [100] asserted that the concept of institutional performance commonly is used to learn modern institutions. The concept of institutional performance, he said, had been applied at research institutes in several countries with a system namely the Organizational Performance Assessment System (OPAC), and he argued that the performance measurement focusses on the two aspects, product outputs and managerial factors that enable the products to exist. In other words, to measure performance of an institution, it could be undertaken in several means, comprising economically evaluating outputs and impacts of the institution, employing an approach of the program evaluation, observing the performance through audits as well as implementing a model of the performance measurement [100].

The method of performance measurement today has extremely varied, ranging from the modest to the complex ones. Overall the selection of institutional performance measurement techniques is greatly affected by measures, scales and levels of the institutional complexity. Some methods of performance measurement already applied are reported in Table 3.

**Table 3:** Various methods of performance measurement

No	Methods	References
1	Checklist	[99]
2	Rating scale-alternative	[99, 97]
3	Graphic rating scales	[101]
4	Behaviorally anchored rating scales-BARS	[102]
5	Behavioral observation scales (BOS)	[103]
6	Management by Objectives (MBO)	[104]
7	Critical incidents)	[105]
8	Forced choice scales	[97]
9	Paired comparations	[97]
10	Forced distribution)	[97]
11	Point allocation method)	[99]
12	Essay	[97]
13	Self assesment	[99]
14	360° Feedback	[101]
15	Balanced scorecard (BSC)	[106]
16	Human Resource Scorecard (HSRC)	[107]
17	Work standard	[97]

Suwignyo et al. [108] reported that performance measurement is a synergy that should be formulated in the form of guidance for each partner. Performance of past organizations merely oriented towards financial measures, in reverse, today it tends to be the application of integrated measurement system between financial criteria and non-financial [106, 108-110]. Additionally, the capability of institutions to produce useful and relevant products highly depends on policies, strategies and managerial practices run in the institutional system themselves, so that the measurement should be performed by evaluating key elements of the managerial implementations that simultaneously also would identify the constraints and conduct an analysis to data and information owned to determine the prevailing tendency scheme in the institutions [21]. One of business and partnership purposes is to obtain better production growth of company performance, thus it should be mutually agreed by organizations engaging the partnership.

## 7. THE PROSPECT OF INSTITUTIONAL RESEARCH

Given that institutional positions in the relation with agro-industrial development make up one strategic aspect, the institutions should be analyzed correctly in order to recognize schemes or models appropriate to develop. This is necessary due to the fact that institutions are essential constituents in undertaking an activity and could not necessarily apply a certain type of agro-industrial institutions on others, unlike capital and technologies [111].

In line with previous discussions, there are some wide-open opportunities of institutional research, they are:

1. Agro-industrial institutional situational analysis for numerous types of mainstay commodities in Indonesia such as coffee, tea, patchouli oil, nutmeg oil, rice, rubber, palm, cacao, clove etc.

2. Different types of institutions have been evolved, how to map the existing institutional positions and how the appropriate development strategies are should be recognized.
3. Every type of institutions has its own and unique structurization that commonly significantly different from each other commodities, including different types and schemes in different regions and countries in the globe, especially developed and developing countries.
4. Strategy designs of institutional development continually are demanded to map the future prospects in dealing with changes and global challenges. Thus, research regarding survival strategies and coping with competitiveness of an agro-industry remarkably remains important to be learnt through a number of subsequent studies
5. Innovation potentials thus far tend to focus on non-agricultural industries and regional development, and there is nearly no specific study of innovation potentials in the context of institutions, especially in the relation of agro-industrial institutions in developing countries.

Similarly, the performance measurement mostly focused on large-scale and developed agro-industries, while the number of the specific performance measurement in the institutional sector remains very low, especially comparable to agro-industrial institutions whose studies conducted are still limited.

## **8. CONCLUSION**

The agro-industrial institution is one of essential pillars in developing particular agriculture-based economic activities. Institutions are needed to organize all resources owned by agro-industries to attain goals and development simultaneously. An evolving scheme or an institutional model has distinctive characteristics in achieving the aspired goals. Therefore, different strategies, research and institutional analyses remarkably remains important to carry out, particularly in the context of Indonesia as a developing country whose types of agro-industries are dominated by the household, small and medium scale industries. A number of strategies, research and institutional analyses possible to be studied are related to the historical analysis, the comparative analysis and the functional analysis, the assessment of institutional positions, the structurization of institutional systems, future prospects, the assessment of innovation potentials and the institutional performance measurement.

## **9. ACKNOWLEDGEMENT**

This work was supported by the Directorate of Higher Education, Ministry of Research, Technology and Higher Education, Republic of Indonesia. The authors also would like to thank the member of Agro-Industrial Technology 2015 in facilitating the data collection.

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