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The Influence of Environmental Knowledge, Participation, the Ability of Managing the Environment on Environmental Insights on Cooperative Members

Arifin Sitio*
Faculty of Economic and Business Univerisity of Mercu Buana (UMB, Jakarta, Indonesia

***Corresponding author**
Arifin Sitio

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Abstract: The aim of this study is to analyze the relationships of the knowledge about environment, member's participation on environment preservation, and member's capacity to manage environment with the environment perspective of cooperatives' members. This study was carried out at the ranch area in Leuwiliang, Bogor (2003) with 70 respondents selected by multi stage random sampling. Respondents are ranchers and the members of cooperative. The data were analyzed using simple regression, multiple regressions, simple correlation, and multiple correlations. The study reveals that there are positive relationships between: (1) the knowledge about environment with the environment perspective of cooperatives' members, (2) member's participation on environment preservation with the environment perspective of cooperatives' members, (3) members capacity to manage environment with the environment perspective of cooperatives' members, and (4) the knowledge about environment, members participation on environment preservation, and members capacity to manage environment, with the environment perspective of cooperatives' members.

Keywords: the knowledge about environment, member's participation on environment preservation, and member's capacity to manage environment with the environment perspective of cooperatives' members.

INTRODUCTION

National development is a continuous series of development efforts covering the whole life of society, nation and state to implement the task of realizing the national goals embodied in the preamble of the 1945 Constitution. According to the Indonesian Law of the Republic of Indonesia No. 23 of 1997 on Environmental Management article 1, paragraph 3, it is clear that environmentally sustainable development is a conscious and planned effort that integrates the environment, including resources, into the development process to ensure the ability, welfare and the quality of life of present and future generations. In order to be accomplished as mandated by the legislation the main thing required in environmentally sound development is the efficient and cautious use of sustainable resources, and how to improve the quality of the environment for the whole community. It is therefore necessary to combine every development in various sectors with environmental sustainability and community welfare.

The concept of sustainable development arises and develops due to the emergence of awareness that economic and social development can not be separated from environmental conditions where development activities are carried out. Between economic development and the lively environment there is interdependence. Economic development is oriented to increase the highest productivity by utilizing natural resources while limited natural resources. So in order to obtain natural resources that can be used continuously, then the implementation of development should be oriented to sustainable development so that environmental sustainability can be guaranteed well. Mubyarto [1] mentions development carried out during the New Order period based on the Development Trilogy namely economic growth, equity and national stability. To achieve economic growth by relying on inefficient natural resources with an orientation towards short-term goals leads to the taking of natural resources in an uncontrollable way so that environmental problems arise.

Sumarwoto [2] mentions a deserved culture that spurs the race to achieve the highest status symbols requiring high financial support so that people are encouraged to earn the most revenue. As a result, the depletion of natural resources continues to increase, among others, forests and mountain land for the construction of houses for oil and petroleum drilling. High environmental damage and pollution occurred at high rates. The same thing is also described by Daniel Chiras [3] which states that human beings, especially human beings are biological imperialism that tend to damage the environment.

To push economic growth is essentially not only the responsibility of the government, but community participation through economic institutions or individuals also contributes to growth. According to Mubyarto [1] there are three national economic actors namely State-Owned Enterprises (BUMN), Private-Owned Enterprises (BUMS), and Cooperatives. The three economic institutions are the support institutions of the national economic power.

In the achievement of the national objectives of the three institutions utilize natural resources both intentional and unintentional exploitation of natural resources that can have a positive or negative impact on the environment. In cooperative members are owners and customers as well as participate in the decision-making process company policy to be implemented by the cooperative manager. Therefore, the role of members in building farmers with environmental insight in the management of dairy farms is crucial.

The livestock business area was obtained from the President's assistance in 1993 followed by the cage development of cages which was held in 1994/1995 by the Bogor Regency Government. Then in 1997 the management was handed over to the Milk Production Cooperative and Livestock Business (KPS-Bogor). The area of the livestock is located in the area of "Pundak Gunung I and Pundak Gunung II" with the land provided for farms per breeder is varying from 4,000 square meters up to 5,000 square meters.

Allocation of land use has been determined that is land for ranchers, cattle pens, and land for cultivation of grass for animal feed. The results of field observations indicate: (1) some empty farmland, (2) vacant lands are not managed, (3) some livestock units changed function to a resting place while maintaining a limited number of cattle. Besides, the number of active members in the year 2000 was 38%, and the inactive members were 62%, the number of cattle in 1998 was 1,847 heads down to 1,569 heads in 2000. From these observations illustrate that the livestock business managed KPS-Bogor is thought to be less concerned about sustainable enterprises. Therefore, it is necessary to conduct research with the cooperative members of the environment.

Based on the above considerations, the research focuses on cooperative members with an environmental perspective by focusing the research on the petrous business area located in Leuwiliang area. The location of this study was chosen based on the consideration that the establishment of livestock area is done with good planning by the local government of Bogor regency, together with related institutions by considering environmental factors.

Among the various factors that influence the three factors selected are suspected to have a positive relationship with members of the cooperative with the insight of the environment that is the understanding of the environment, partisi-pasi in maintaining the environment, and the ability to manage the environment.

The research problem is formulated: (1) is there any relation between environmental knowledge and cooperative members with environmental insight? (2) is there a relationship between participation in maintaining the environment with members of cooperatives that have environmental insight? (3) whether there is a relationship between the ability to manage the environment with cooperative members of the environment, and (4) whether there is a relationship between knowledge about the environment, participation in maintaining the environment, and the ability to manage the environment together with members of the cooperative environmentally friendly?

LITERATURE REVIEW

Cooperative members are Environmental Insights (Y)

The Cooperative is a gathering of persons or legal entities that provide freedom of entry and exit as members by working together in a familial way to enhance the physical well-being of its members Anoraga [4]. Hatta [5] defines cooperatives as a concerted effort to improve the fate of economic life on the basis of help. The spirit of help is helped by the desire to give services to friends based on a make all and all for one.

International Labor Organization (ILO) provides 6 elements that the cooperative contains. The six elements are: (1) association of persons, (2) voluntarily joined together. (3) to achieve a common economic end, (4) formation of a democratically controlled business organization. (5) making equitable contribution to the capital required, and (6) accepting a fair share of the risk and benefits of the undertaking.

According to Sitio, and Tamba [6] The limit of Indonesian Cooperative contains 5 elements: (1) cooperative is Business enterprise. As a business entity, the cooperative must earn a profit. Profit is a key element in a business system where the system will fail to work without earning a profit, (2) the cooperative is a collection of persons and or cooperative legal bodies. This means that the Cooperative is not a collection of capital. In this case, Law Number 25 of 1992 provides the minimum number of people (members) who want to form a cooperative organization that is at least 20 people for primary cooperatives and 3 cooperative legal bodies for secondary cooperatives. Another requirement that must be met is that the members have the same economic interests, (3) the cooperative is a cooperative

working under the "principles of the Cooperative", (4) the Indonesian cooperative is the "People's Economic Movement". This means that the Indonesian Cooperative is part of the national economic system. Thus, cooperative business activities are not solely aimed at members but also to the general public. (5) Indonesian cooperatives are based on abbreviation. With this principle then decisions relating to business and organization are based on the spirit of kinship. Any decisions taken should be based on consensus. The core of the familial principle is the sense of justice and love in every activity related to cooperative life.

Gottlieb [7] describes that the environment is not all around us, but all the circumstances in human life and behavior. While Muhammad Soerjani [8] classifies the environment in: the natural environment, and artificial environments that include: (1) primary industry; (2) secondary industries; and (3) tertiary industry. The other environment is the social environment.

Roberts [9] divides the environment into three types: (1) the natural environment includes air, water, soil, and organisms in living plants or plants, (2) Built Environment includes urban areas and industrial development, and (3) social environment related to culture, law, economy, music and others. An environment is not only determined by the type and number of living or dead objects, but also by the condition and behavior of living things and the state of the dead objects, and the relationship between them. Therefore, all creatures that exist in this planet of the earth are interdependent, then in the implementation of development should be done concept of sustainable development.

Welsh [10] describes environmentally sound development as development that meets current needs without diminishing the right of future generations to meet their own needs. In other words it is explained that we must take care of the earth we live in because the earth is the property of future generations as well. Basically it is a certainty of life that has a better quality for the present and future generations. This fact affects everyone and every aspect of our lives.

The World Commission on Environment and Development of the World Commission on Environment and Development, defines Sustainable Development as a development that meets the needs of the present without compromising the right to meet the needs of future generations of IUCN [11]. The GOI implemented it through Repelita VI, which is the efficiency of sustainable and environmentally sound development including (1) selection of development sites, (2) reduction of waste production, (3) waste management, (4) determination of environmental quality standard, (5) nature conservation, nature and environment, and (6) institutional development, community role, and human resource capability.

Sustainable development is used in the Earth's rides to mean improving the quality of human life while striving not to exceed the ecosystem's ability to support life. The implementation of sustainable development will help develop the development plan in such a way that the implementation of development is not merely pursuing growth but it is necessary to consider the continuity of natural resources can be guaranteed for future generations.

To achieve sustainable communities the World Commission for Environment and Development issues the following nine principles: (1) to respect and maintain the community of life; (2) to improve the quality of human life; (3) to preserve the carrying capacity and diversity of the earth; (4) avoiding the waste of nonrenewable resources, (5) striving not to exceed the capacity of the earth's carrying capacity, (6) changing people's attitudes and lifestyles, (7) supporting the creativity of communities to nurture their own environment, (8) providing a national framework for combine development and sustainability efforts, (9) create global cooperation.

In relation to the foregoing, IUCN [11] reminds the existence of a constantly changing world, conservation efforts must maintain an ecosystem-tem capacity that includes (1) preserving life support systems provided by nature, (2) preserving diversity life forms on earth, and (3) ensuring that the full use of renewable resources will be sustainable.

Todaro [12] outlines a continuous or sustainability definition in order to explain the nature of the desired development balance of economic growth on the one hand, and the preservation of the environment or natural resources on the other essentially is referring to the fulfillment of the needs of the present generation without harming the needs of future generations.

In order to achieve sustainable development, the environmentally friendly development should be replaced by environmentally friendly development, both the physical environment and the social environment of Soemarwoto culture [13]. It further explained that being friendly to the environment means that we do not "harm" the environment and its ecological role in our development process. The meaning of development is to change the environment from conditions that support life at a low level of welfare into a living environment that supports our lives at a higher level of prosperity. So the development of the environment is not preserving the environment on the condition but changing it will be better.

Sonny keraf [14] outlines that much environmental damage is caused by anthropo-centric human behavior. Anthropocentric is an environmental theory that views people and their interests as being deemed the most decisive in ecosystem order and in policies taken in relation to nature, either directly or indirectly.

In order to achieve environmentally sound development Supardi [15] outlines the principles of sustainable living: (1) respect and nurture the life of the community, (2) improve the quality of human life, (3) (4) avoiding non-renewable resources, (5) trying not to exceed the capacity of the earth's carrying capacity, (6) changing attitudes and lifestyles of individuals, (7) supporting the creativity of the masses to nurture the environment itself, (8) provide a national framework for integrating conservation development efforts, and (9) create global cooperation.

Humans in fulfilling their life can not be separated from the environment, because of its dependence, so humans must maintain and preserve the environment so that limited resources can be managed to meet the needs of human life, the present and the future. So that every component that is in it either in the form of biotic or abiotic can be naturally maintained. Insufficient care in the environment will damage the ecosystem that can lead to environmental problems. The inappropriateness of human relationships with the environment, will result in disruption of human welfare. Therefore, in order to create an environmentally-oriented society view of Chiras [3] suggests (1) using resources sparingly and conserving, (2) reusing and recycling used materials, (3) may use renewable resources, and (4) control population growth.

In line with several theories outlined above, the indicators of this study are (1) savings on natural resource use, (2) reusing and recycling used materials, (3) using renewable resources, (4) recovery damaged environmental resources, and (5) environmental health maintenance.

After describing the various theories concerning members of the cooperative with the insight of the environment above, the meaning of the cooperative Member with the vision of the environment is any action of cooperative members in managing the livestock business as measured by the indicators of saving the use of natural resources, reusing and recycling used materials wearing, using renewable resources, restoring damaged environmental resources, and maintaining environmental health.

Knowledge of the Environment

According to Bloom [16] describes several categories of knowledge that are described according to the behavior of remembering information from simple and concrete to complex information. Aspects of knowledge are classified into 3 (three) groups broken down into 9 (nine) aspects: (1), specific knowledge covering specific information that must be utilized in communicating, understanding, systematically organizing certain areas of knowledge. This knowledge includes specific terms and facts. (2) knowledge of methods include: habits, trends, classifications, categories, and methods. (3) knowledge of the universality and abstraction in a field includes principles and generalizations, theories and structures.

Leachey [17], explains that we accept an object and action of a perception formed by the mental image in our mind of an object. We know only from the picture because the object is in the mind and we immediately understand each other with the object not directly but through the image. This is because the origin of knowledge in which the objects themselves are initially visible, then the knowledge is what is our certainty about the image of the object in our mind rather than the object itself.

Suriasumantri [18] knowledge is a very important element in human life because knowledge is essentially a product of thinking in the human mind about the various information received. What we know about an object of course also through memory. So what Bloom and Suriasumantri say is essentially the same. It is no different from what Romiszowski explains [19] which explains that knowledge is in our minds which can be stored in information. It's just that Romiszowski distinguishes knowledge into several forms and the main ones, namely: knowing the object, on the same occasion (both direct experience or as verbal information), and knowing what to do in a situation or knowing a procedure. The procedure here should be elaborated further so that it is not much different from the process as proposed by Bloom.

Salim [20] states that environmental knowledge itself can be obtained from various sources, for example from formal education (such as counseling, courses and so on) or from various print or electronic media. The environment can be defined as all things, circumstances and influences contained in the space occupied and affect the things that live including humans.

Danusaputro [21] describes the environment as an object, power and condition including man and his behavior that exists within the occupied space and affects the survival and well-being of human beings and other living organisms. Soemarwoto [13] describes that the environment is as a space occupied by a living being together with the living and non-living things in it.

Environment in terms of types can be divided into three namely: (1) (physical environment), that is

everything that is around the tangible objects such as buildings, chairs, and other inanimate objects, (2) (biological environment), that is, everything that exists in the form of living things like human beings, animals, plants, and other living things, and (3) the social environment of the people around. Soerjani [8], classifying the environment in: natural environment, and artificial environments which include: (1) primary industry; (2) secondary industries; and (3) tertiary industry. The other environment is the social environment.

Irwan [22] describes ecosystem factors as a habitat component comprising (1) abiotic factors including soil, climatic factors and water factors; (2) biotic factors including producers, consumers and decomposers, (3) human factors include ideology, politics, economy, social, culture, and (national and personal). In line with the environmental divisions described by some of the experts mentioned above, in this study the environment in question is the environment of biotic, abiotic environment, and social environment.

Based on the above opinions, the writer tries to define knowledge about the environment is any information that is known either from learning result or from experience directly or indirectly include: (1) term, (2) fact, (3) habit, (4)) tendencies, (5) methods, (6) principles, and procedures concerning the biotic, abiotic, and social environments.

Participation in Maintaining the Environment

Participation is the participation, participation or involvement associated with the outward circumstances of Sastropoetro [23]. This understanding explains the role of society to participate or contribute energy and thoughts into an activity, in the form of ego or self or personal involvement more than just physical activity. The definition of participation above describes when a person participates in an organization or a form of cooperation involving more than one person, then each individual is expected to contribute energy and mind to the organization. Others argue that participation is the mental, physical and emotional involvement of people in a group situation to contribute to group goals and share responsibility in achieving Davis's goals [24].

Tannenbaum [25] defines participation as the mental and emotional involvement of individuals in group situations that encourage them to contribute to group goals and share their shared responsibilities. This opinion is reinforced by Allport in Sastropoetro [23] argues that participation is ego or self-involvement and not merely a physical engagement but involved as a whole including thoughts, feelings and will. Participation of a person in an activity is generally preceded by the presence of awareness and interest. But not infrequently the participation of a person is caused by coercion, invitation, persuasion or command of others. Therefore, the background of one's participation on an activity has an unequal intensity.

Sastropoetro [23] also distinguishes the participation of seven types, namely (1) participation with the mind, (2) the participation of manpower (3) participation of mind and energy equal to active participation, (4) participation with skills, (5) participation with goods, (6) participation with money, and (6) participation with services and (7) mobilizational participation. Swakarsa participation means the participation or participation of a person in an activity based on consciousness and self-interest, while mobilization participation means that the participation or participation of a person in an activity over the direction of others. Participation implies co-operation with many parties and in that cooperation one can actualize oneself by analyzing all of his abilities.

Suratmo [26] The basic objectives of community participation are: (1) involving the community in environmental management; (2) involving the community in the development of the state; (3) helping the government to take better and more appropriate policy and decisions.

Schermerhorn [27] describes in participation there are two main points to note: (1) the community requires that they be actively involved in decision-making processes of mutual interest, (2) they feel able to take responsibility in doing or do something for their own benefit. Thus the community must feel that they are part of the decision maker that concerns the common interest. From the description means the community has an alternative in the decision-making process provided by the community or social institutions and others.

Hardjosoemantri [28] there are three conservation targets: (1) ensuring the maintenance of ecological processes that support the life support system for sustainable development and human welfare (protection of life support systems), (2) ensuring the maintenance of genetic resources and the types of ecosystems, and (3) controlling the means of utilizing biological natural resources so as to ensure its sustainability.

Resosoedarmo [29] Conservation analogy is intended as a rational use of the environment for the purpose of a high quality of life of various human types, including human planning and control in the use of its environment, taking into account the future of humankind and with a sustainable environmental view for the satisfaction of human aspirations, including maintaining or enhancing diversity in the environment. To maintain the utilization of natural resources

(especially biological) can take place with the best, so necessary maintenance steps so that the balance is achieved and attached to the development itself. To ensure the preservation of natural resources, it is necessary to conserve natural resources.

The theoretical review of participation in preserving the environment above, concluded that participation in preserving the environment in this research is the involvement of thought, physical, and contribution and responsibility in maintaining ecology, maintaining biodiversity and controlling the utilization of natural resources.

Ability to Manage the Environment

Ability is a function of experience, and the skills or performance carried by individuals or groups for a particular task or activity Hesselbein [30]. Robbins [31] Defines Ability is the capacity of individuals to perform various tasks in a job. The ability to reflect on existing capacities to present diverse tasks is required in the work provided.

Robbins [31] argued that the essence of individual ability is composed of two sets of factors, namely intellectual ability, and physical ability. Salusu [32] Ansoff and Mc Donnel's opinion about the behavioral abilities must first be seen in the extent to which the executives anticipate or react to discontinuities within the organizational environment. Characteristic abilities are more skilful than people or blessed by acting with a healthy mind. In other words, the extent to which management responds to events in the environment. The second way is to identify the profile of organizational capability that results in different types of responses. Management responses can be explained by three attributes of capability, ie climate (will to response), ability (ability to response), and capacity (volume of response). Climate is the ability of management to provide resonance to changes in the environment. Based on several theories above ability can be concluded that ability is individual capacity.

Further explained the definition of environmental management can be defined as a conscious effort to maintain or improve the environmental quality so that our basic needs can be met with the best of Soemarwoto [13]. Further explained that environmental management has scope: (1) environmental management routinely, humans routinely manage their environment such as garbage disposal and manufacture sewerage from bathroom. (2) early planning of environmental management of a region that becomes the basis and demand for development planning. Early environmental management planning needs to be developed to be able to provide guidance on what development is appropriate in an area where the development is carried out and how it is implemented, (3) environmental management planning based on the estimated environmental impacts that will occur as a planned development project. Many areas do not have an environmental management plan yet. The area then has regional development planning in terms of economic and technical, or at all not have any planning. For example, large suburbs and mountainous terrain around it have great potential for residential and tourism industries, but do not have environmental management plans. Consequently, water pollution is the source of drinking water, because the industry is placed in the upper reaches where water is taken for water purification installations. (4) the planning of environmental management to improve the damaged environment, either by natural causes or by human actions Soemarwoto [13].

Environmental management is an integrated effort in the utilization, regulation, maintenance, supervision, control, recovery and environmental development of Salim [20]. From the description can be concluded that the management of the environment can be defined as human efforts to consciously use to maintain and improve the quality of the environment so that the environment can meet the needs of natural resources needed. Therefore, the extraction of natural resources needs to be planned in such a way that negative effects on the environment can be avoided and ensure the continuous supply of natural resources.

Environmental management is an effort made gradually because the action in management begins with: preparation of the plan, prepared with the implementation stage in the form of utilization, control, and supervision. The next stage of recovery and environmental development to preserve the environmental quality Supardi [15].

In accordance with the above theories can be concluded that the ability to manage the environment in this study is the capacity of individuals in carrying out various tasks in a job including the utilization, structuring, supervision, control, recovery and development in order to improve the quality of biotic environment, abiotic, and social environment.

Framework of thinking

The relationship between knowledge about the environment and cooperative members of the environment

An environmentally sound cooperative member is every member of the cooperative's actions in managing the livestock business as measured by indicators of saving natural resources, reusing and recycling used materials, using renewable resources, restoring damaged environmental resources, and maintaining environmental health .

Knowledge of the environment is all that is known to a person either obtained from the learning

process or from experience directly or indirectly about the environment so as to provide awareness for him in doing positive actions related to the environment. The knowledge of the environment owned by everyone involved in the business activities of cooperative members ranging from employees, and administrators will be instrumental to determine the direction of cooperative members who are environmentally sound.

In managing livestock, there are activities that are closely related to the environment due to the taking of natural resources such as grass, water and waste disposal activities. In the interaction can occur positive or negative impact on the environment. Proper knowledge of the environment will increase the attention and awareness of members, and cooperative managers about the importance of the environment so as to reduce actions that have a negative impact on the environment.

The higher the environmental knowledge of cooperative members will provide awareness for them in acting not to damage the environment or at least can reduce the negative impact of their business activities. Therefore, the knowledge about the environment of the members of the better cooperative will be able to improve the members of cooperatives that are environmentally sound. The above description and flow of thinking can be said that knowledge of the environment is needed to improve the success of cooperative members of the environment, so it can be assumed that there is a positive relationship between the knowledge of the environment and the members of the cooperative with the insight of the environment.

The relationship between participation in maintaining the environment with cooperative members of the environment

Participation in preserving the environment in this research is the involvement of mental, physical, and contribution and responsibility in maintaining ecology, maintaining biodiversity and controlling the utilization of natural resources. The intensity of business activities undertaken by members in the livestock business is closely related to the environment. In an effort to manage environmentally sound farms is a manifestation of the participation of members in maintaining the environment.

Participation of members in building cooperative members of environmentally friendly can occur from the planning of cooperative business activities, business participation, control as well as customer (customer) of the cooperative. The higher the participation of maintaining the environment of cooperative members will be able to improve the members of the cooperative with the insight of the environment.

The description can be concluded that participation in maintaining the environment is very necessary in reaching members of cooperatives that are environmentally sound, thus it can be assumed that there is a positive relationship between participation in maintaining the environment with members of cooperatives that are environmentally sound.

The relationship between the ability to manage the environment with cooperative members who are environmentally sound

Cooperative business as a whole can be seen from the start of cooperative business managed by members and managed by the cooperative itself. In the business management involves various elements of both elements of employees, elements of members, and elements of cooperative management. All the elements involved require organizing for each element to work in accordance with the purpose of the cooperative. Therefore it takes the ability to manage for each member of the cooperative in the management of its business so that the use of resources can be planned in a sustainable manner.

The ability to manage the environment owned by members of the cooperative in the livestock business will be able to direct everyone involved in the organization to be willing to work in earnest to achieve the targets that have been determined. The higher the ability of managing the environment of the members of the cooperative will be able to increase livestock productivity so that members of environmentally sound cooperatives can be achieved.

Description of the flow of thinking above can be said that the ability to manage the environment is needed to improve the success of cooperative members who are environmentally sound, so it can be expected that there is a positive relationship between the ability to manage the environment with members of cooperatives with environmental insight.

Hypothesis Formulation

To test the relationship between independent variables with the dependent variable then formulated the working hypothesis as follows:

- First, there is a positive relationship between knowledge about the environment and cooperative members of the environment.
- Secondly, there is a positive relationship between participation in maintaining the environment and cooperative members of the environment.
- Third, there is a positive relationship between the ability to manage the environment and cooperative members of the environment.

RESEARCH METODE

Based on the formulation of the problem that has been described so specifically this research aims to: (1) know the form of the relationship of knowledge about the environment with cooperative members of the environment, (2) knowing the relationship between participation in maintaining the environment with cooperative members of the environment, (4) to know the form of relationship between the ability to manage the environment with the members of the cooperative, and (4) to know the form of relationship between knowledge about environment, participation in maintaining the environment, and the ability to manage the environment together with cooperative members with environment insight.

The implementation of the research was conducted in the Livestock Business Area (KUNAK) located in Leuwiliang District, Bogor Regency. All farms total 180 breeders of cooperative members. The sample was taken by multi-stage random sampling method with 70 farmers from two shoulders I and Pundak II.

Pattern relationship between variables in the study described as follows:

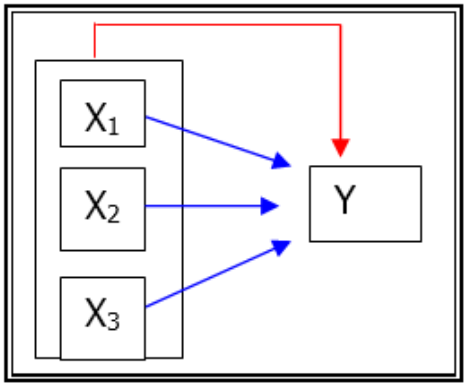

Fig-1: Correlation between Research Variables

Information:
→ = Correlation X_i ($_i$ = 1,2,3) Each variable with Y
→ = Correlation X_i ($_i$ =1,2,3) together with Y
X1 = Knowledge of the environment
X2 = Participation in maintaining Environment
X3 = Ability to manage Environment
Y = Cooperative members are environmentally friendly

This study used survey method, with questionnaire and test-shaped instrument. The instrument in the form of questionnaires is a member instrument that is environmentally sound (Y) and participation in maintaining the environment (X_2). While the test-shaped instrument is an environmental knowledge instrument (X_1) and an environmental control capability instrument (X_3).

The instrument has been tested against 20 respondents. The experimental results show the coefficient of reliability: (1) the cooperative member of the cooperative (Y) instrument using Cronbach Alpha formula or r_{it} = 0.877, (2) the environmental knowledge instrument (X_1) using Biserial Point or r_{it} = 0.915, (3) the instrument of participation in maintaining the environment by using the Alpha Cronbach formula or r_{it} = 0.896, (4) the environmental management capability instrument (X_3) by using the Biserial Point or rit = 0.918 correlation formula.

RESULTS AND DISCUSSION

Requirements Analysis

The test of the analysis requirements used was the normality test of data by the *Lillefors* test while the homogeneity of the population variance was tested by *Barlett* test technique. The summary of normality data test results are in table 1, and the summary of homogenity test of population variance is in table-2 below.

Table-1: Normality Test Summary

No	Y estimate error to	Value L_0	L_{table}	Information
1	X_1	$0,1076^{ns}$	0,1232	Normal
2	X_2	$0,1027^{ns}$	0,1232	Normal
3	X_3	$0,1109^{ns}$	0,1232	Normal

Homogeneity Test of Variance

The homogeneity test of variance is intended to test the homo-variance of variance among Y score groups grouped by the similarity of the Xi values. The data test is done by using Barlett test.

Table-2: Summary of Homogeneous Variance Test Results

No	Y against	χ^2_{count}	dk	χ^2_{table}	Conclusion
1	X_1	9,90	55	73,50	Homogeneous
2	X_2	**9,21**	**27**	**40.10**	Homogeneous
3	X_3	5,87	50	67,50	Homogeneous

Hypothesis testing

The first hypothesis, there is a positive relationship between knowledge about the environment (X_1) with members of environmentally sound cooperatives (Y). From the test results obtained regression equation $\hat{Y} = 35.525 + 0.832\ X_1$.

To know the significance and linearity of regression equation is done by analysis of variance test (ANOVA) result is contained in Table-3. the following:

Table 3: Table ANOVA for the Significance and Linearity Test of Regression $\hat{Y} = 35.525 + 0,832\ X_1$

Source Variants	Dk	JK	RJk	F_{count}	F_{table}	
					α =0,05	α= 0,01
Total	70	3345				
Reg (a)	1	2095,.21				
Reg b/a)	1	491.93	491.93	44,14**	3,98	7,01
Sisa	68	757,85	11,14			
Tu. Cocok	15	71,51	4,76	$0,54^{ns}$	1,85	2,39
Error	53	686.33	12.94			

***: regression is very significant (F_{count} = 44,14 > F_{table}= 7,01)*

^{ns}: form of linear relationship (F_{count} = 0,54 < F_{table} = 2,39)

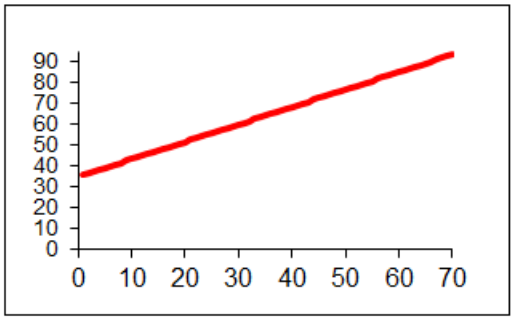

Chart-1: Simple Linear Regression $\hat{Y} = 35,535+0,832\ X_1$

Model image of regression equation $\hat{Y} = 35.525 + 0.832$ X1 is presented in the following picture graph 1.

The strength of the relationship of knowledge about the environment (X_1) with the member of environmentally friendly cooperatives (Y) of $r_{y1} = 0.627$ is presented in table-4 below:

Table-4: Table of Significance Test of Correlation between Knowledge of the Environment with Cooperative Member of Environment

N	Correlation coefficient (r_{y1})	T_{count}	t_{table}	
			α =0.05	α=0.01
70	0,627	5,349**	1,67	2,39

** very significant (t_{count}=5,349 >t_{table}=2,39)

Partial Correlation

If the controlling of participation in environment purchasing (X_2) is obtained partial correlation coefficient $r_{yi.2} = 0,5759$ and if controlled to the environmental management ability (X_3) partial correlation coefficient $r_{y1.3} = 0,5064$ and if controlled together by participation in maintaining the environment (X_2) with the ability to manage the

environment (X_3) partial correlation coefficient $r_{y1.23}$ = 0.4666.

A summary of partial correlations between environmental knowledge and cooperative members of the cooperative is presented in Table-5.

Table-5: Testing Results Significance of Partial Correlation Coefficient between Knowledge of the Environment and Cooperative Environment-Based Members

Correlation	*Controlled*	*N notation*	*Correlation coefficient*	T_{count}	t_{table}	
					α= 0.0	α= 0.0
X_1 with Y	*X_2*	*$r_{y1.2}$*	*0.5759*	*7,139***	*1,67*	*2,39*
X_1 with Y	X_3	$r_{y1.3}$	0.5064	4,660**	*1,67*	*2,39*
X_1 with Y	*X_2 and X_3*	*$r_{y1.23}$*	*0, 4666*	*4,882***	1,67	*2,39*

*** correlation coefficient is very significant (t_{count} = 7,139 > t_{table} = 2,39)*
*** correlation coefficient is very significant (t_{count} = 4,660 > t_{table} = 2,39)*
*** correlation coefficient is very significant (t_{count} = 4,882 > t_{table} = 2,39)*

The second hypothesis, there is a positive relationship between participation variables in maintaining the environment (X_2) with members of the cooperatives that are environmentally sound (Y). It is proved by the results of hypothesis testing obtained by regression equation $\hat{Y}$ = 35.837 + 0.2357 X2. To know the significance and linearity of the regression equation, the test of variance analysis (ANOVA) is shown in Table-6 below:

Table-6: ANOVA Table (Variance Analysis) Significance Test and Linearity Regression Equation $\hat{Y}$ = 35,837 + 0,235 X2

Source of variance	***dk***	***JK***	***RJk***	*1*	F_{count}	F_{table}	
						α = 0,05	α = 0,01
Total	*70*	*3345*					
Reg (a)	1	*2096,20*					
Reg (b/a)	1	162,79	*162,7915,98*		10.18*	3,98	7,01
residual	68	1086,99					
Tu. Suitable	15	285,30	9,02		10.18**	1,85	2,32
Error	53	801,68	15,12				

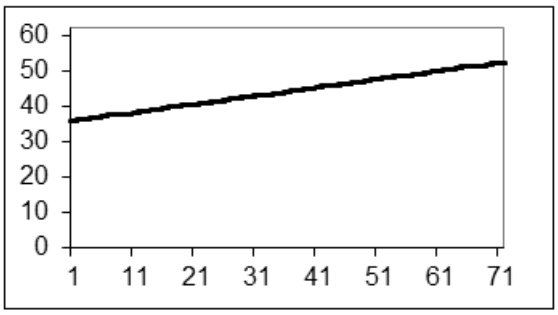

Chart 2: Simple Linear Regression $\hat{Y}$ = 34,302 + 0,737 X_2

The model image of the regression equation is presented in the following chart 2.

The strength of the relationship of participation in maintaining the environment (X_2) with members of the cooperative with the insight of the environment (Y) of r_{y1} = 0.361 is presented in table-7 below:

Table-7: Table of Significance Test of Correlation Coefficient between Participation in Maintaining Environment with Environmentally Friendly Cooperative Member (Y)

n	Correlation Coefficient (r_{y1})	T_{count}	t_{table}	
			α=0.05	α =0.01
70	0,361	3,190**	1,67	2,39

** very significant (t_{count} = 3,190 > t_{table} = 2,39
n = number of samples

Partial Correlation

If controlled for environmental knowledge (X_1) is obtained partial correlation coefficient $r_{y2.1}$ = 0, 2833 and if controlled to the ability of managing the environment (X_3) partial correlation coefficient $r_{y2.3}$ = 0.2941 and if done joint control by knowledge about environment (X_1) with Ability to manage environment (X_3) partial correlation coefficient $r_{y2.13}$ = 0,2771. A summary of partial correlations between participation in managing the environment and cooperative members of the cooperative is presented in Table-8.

Table-8: Summary of Partial Correlation Coefficient Calculations and Significance Test between Partitioning in Maintaining the Environment with Eco-Based Cooperative Members

Correlation	controlled	Notation	Correlation Coefficient	T_{count}	t_{table}	
					α= 0.05	α= 0.01
X_1 with Y	X_2	$r_{y2.1}$	0.2833	2,417**	1,67	2,39
X_1 with Y	***X_3***	***$r_{y2.2}$***	***0.2941***	***2,518****	1,67	2,39
X_1 with Y	X_2 and X_3	$r_{y2.13}$	0,2771	2,460**	1,67	2,39

*** correlation coefficient is very significant (t_{count} = 2,417 > t_{table} = 2,39 α = 0.01)*
*** correlation coefficient is very significant (t_{count} = 2,518 > t_{table} = 2,39 α = 0.01)*
*** correlation coefficient is very significant (t_{count} = 2,460 > t_{table} = 2,39 α = 0.01)*

The third hypothesis, there is a positive relationship between the variables ability to manage the environment (X_3) with members of the cooperative environmental awareness (Y). This is evidenced from the results of testing the hypothesis obtained regression equation $\hat{Y}$ = 39.806 + 0.612X3. To know the significance and linearity of the regression equation, the analysis of variance (ANOVA) test result is shown in Table-9. below:

Table-9: ANOVA Table (Variance Analysis) Test of Significance and Linearity of Regression Equation $\hat{Y}$ = 39,806 + 0,612 X_3

Source of Variant	dk	JK	RJk	F_{count}	F_{table}	
					α = 0,0	α =0,01
Total	70	3345				
Reg (a)	1	2095,21				
Reg (b/a)	1	255,04	255,040	17,43*	3,98	7,01
Residual	68	994,746	14,286			
Tu. Fix	11	188,482	17,134	1,211^{ns}	1,84	2,37
Error	53	806,263	14,144			

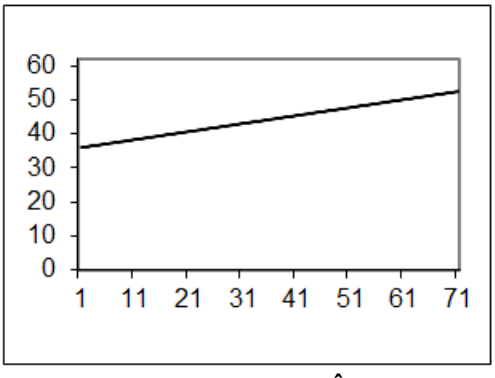

Chart-3: Simple Linear Regression $\hat{Y}$ = 39,806 + 0,612 X_3

The strength of the relationship between the variables of participation in maintaining the environment (X_2) with the members of environmentally sound cooperatives (Y) showed the correlation coefficient r_{y3} = 0.452 is presented in table-10.

Table-10: Table of Significance Test of Correlation Coefficient between Environmental Management Capability and Cooperative Member of Environment

n	Correlation Coefficient (r_{y1})	T_{count}	t_{table}	
			α=0.05	α=0.01
70	0,452	4.17**	1,67	2,39

** very significant (t_{count}=4.17 > t_{table} =2,39)

Partial Correlation

If controlled knowledge of environment (X_1) is obtained partial correlation coefficient $r_{y3.1}$ = 0,3155 and if controlled for participation in maintaining environment (X_2) partial correlation coefficient $r_{y3.2}$ = 0,4050 and if done controlled by knowledge of the environment (X_1) with participation in maintaining the environment (X_2) partial correlation coefficient $r_{y3.12}$ = 0.3466.

Summary of partial correlations between environmental knowledge and the cooperative members of the cooperative is presented in table-11 below:

Table 11: Summary of Partial Correlation Coefficient Calculation and Significance Test between Ability to Manage the Environment with Environmentally Friendly Cooperatives Members

Correlation	Controlled	Notation	Correlation coefficient	t_{count}	t_{table}	
					α= 0.05	α=0.01
X_1 with Y	X_2	$r_{y3.1}$	0,3155	3,901**	1,67	2,39
X_1 with Y	*X_3*	*$r_{y3.2}$*	*0,4050*	*3,625***	1,67	2,39
X_1 with Y	X_2 with X_3	$r_{y3.12}$	0,3466	3,024**	1,67	2,39

*** correlation coefficient is very significant (t_{count} = 3,901 > t_{table} = 2,39)*
*** correlation coefficient is very significant (t_{count} = 3,625 > t_{table} = 2,39)*
*** correlation coefficient is very significant (t_{count} = 3,024 > t_{table} = 2,39)*

Fourth hypothesis, there is a positive relationship between the variables of knowledge about the environment, participation in maintaining the environment, and the ability to manage the environment with cooperative members of the environment. This is evidenced from the results of hypothesis testing obtained by multiple regression equation $\hat{Y}$ = 30,34 + 0,66 X_1 + 0,11 X_2 + 0,18 X_3.

To know the significance of multiple regression equation, F test is obtained that $F_{count} > F_{table}$ (16,68> 2,39) proves that there is positive relation between knowledge about environment, participation in maintaining environment, and ability to manage environment together with cooperative members of the environment (Y).

Table-12: ANOVA Table (Variance Analysis) Multiple Regression Significance Test $\hat{Y}$ = 30,34 +0,66 X_1 + 0,11 X_2 + 0,18 X_3

Source of variants	Dk	JK	RJk	F_{count}	F_{table}	
					α =0,05	α =0,01
Total	70	3345				
Regression	4	538.87	179,62	16,68*	1,67	2,39
Residual	66	1249.79	18,94			

***multiple regression is very significant (F_{count} = 16, 68 > F_{table} = 2,39)*

The result of the calculation of the double correlation coefficient between the knowledge of the environment (X_1), the participation in maintaining the environment (X_2), and the ability of managing the environment (X_3) with the members of the cooperative with the insight of environment (Y) obtained the double correlation coefficient of ($r_{y.123}$) 66 presented in table-13.

Table-13: Summary of Relationships X1, X2, and X3 with Y

n	$R_{y.123}$	F_{count}	F_{table}	
			α =0,05	α = 0,01
70	0,66	16,68	1,67	2,39

The strength of the relationship is shown by the dual correlation coefficient between environmental knowledge, participation in environmental preservation, and environmental management capability of Ry.123 = 0, 66. From the results of the double correlation significance test (Fh = 16, 68> Ft = 2.39 on α = 0.01) indicates that the coefficient of multiple correlation is very significant. Thus it can be concluded that there is a positive relationship between knowledge about the environment, participation in maintaining the environment, and the ability to manage the environment together with members of the cooperative with the insight of the environment. The coefficient of determination is $R_{2y.123}$ = 0.431. This illustrates that 43.1% of the variations occurring in cooperative members of the environment in the management of dairy farms can be explained jointly by variations in environmental knowledge, participation in maintaining the environment, and the ability to manage the environment through regression equations $\hat{Y}$ = 30,34 + 0,66 X_1 + 0,11 X_2 + 0,18 X_3.

Ranking the Strength of Relationships

The ranking of relationships based on partial correlation coefficients between knowledge of the environment, participation in environmental preservation, and environmental management capability with cooperative members of the cooperative are presented in table-14 below:

Table-14: Ranking Relationships between Independent Variables and Dependent Variables

Partial correlation coefficient	Ranking
$r_{y1.23}$ = 0,47**	First
$r_{y3.12}$ = 0,35**	Second
$r_{y2.13}$ = 0,28**	Third

CONCLUSION AND SUGGESTION

CONCLUSION

First, there is a positive relationship between knowledge about the environment and cooperative members of the environment. If the members of the cooperative with the environment will be improved, then the knowledge about the environment of the respondents should be increased to be higher. Secondly, there is a positive relationship between the participation of maintaining the environment and cooperative members of the environment. Thus, if members of an environmentally sound cooperative will be improved better, then the participation of maintaining the environment needs to be improved positively. Third, there is a positive relationship between the ability to manage the environment with cooperative members who are environmentally sound. Thus, if the members of environmentally sound cooperatives will be improved for the better, then the ability to manage the environment needs to be improved. Fourth, the three factors that contribute to determine the cooperative members of environmentally conscious cooperatives from the highest to the lowest are (1) knowledge of the environment, (2) the ability to manage the environment, and (3) participation in maintaining the environment. Thus, if the members of the cooperative with a vision of the environment to achieve better, then the first need to be improved is the knowledge of the environment first, then proceed with improving the ability to manage the environment, and participation in maintaining the environment.

IMPLICATIONS

The findings of this study as described in the positive relationship between knowledge about the environment, participation in maintaining the environment, and the ability to manage the environment with cooperative members of the environment. If the improvement of environmentally friendly cooperative members becomes the focus of the objective of achieving the improvement of environmentally friendly cooperative members in carrying out the livestock business they manage, the implications to be considered are as follows:

Efforts to improve knowledge about the environment

- First, improve the knowledge of the environment of the cooperative members' farmers through counseling about the management of sustainable livestock business.
- Second, the provision of reading materials and brochures related to the environment in each group of members so that each group meeting, group members can read and discuss environmental issues.
- Third, providing films on VCD / video cassettes on environmental issues, especially those related to livestock business.

Efforts to improve environmental management

First, improve the skills of breeders through ongoing business management training for farmers / employees so that farmers know the ways to manage environmentally sound farming business.

Secondly, it introduces efficient and effective and environmentally friendly technology to produce concentrates so that livestock farmers' management improves and can produce quality concentrate needs and are available at all times.

Third, make a comparative study to a better farm. By looking at the better farm management will increase the insight of breeders in the management of livestock business that eventually can practice it.

Fourth, the amount of grass needed per cow per day is 40 kg. While the grass is not sufficient crops. Therefore, the cooperative needs to take steps in cooperation with outsiders to plant grass and the results are sold to members. Thus the need for a high-calorie and healthy grass can be obtained on an ongoing basis. Fifth, the disposal of livestock wastes using four patterns, namely (1) cow dung directly flowed into the field where the grass cultivation when cleaning the cage, (2) cow dung first collected in the open, then after dry is used for grass fertilizer and partly made compost. This pattern causes environmental pollution with a quite disturbing odor, (3) create a liquid waste storage pond, cow manure is flowed into the pond and from the pond made the sewer door to the lawn planting ground. (4) create a pond that has a double function as a place of fish maintenance, and a place for liquefied cow dung. From the pool then made a water gate that serves to irrigate the grass planting land.

Sixth, since this research started from September 2000 to January 2003, there have been 2 (two) change of cooperative management in general due to the case of management. To overcome the crisis of stewardship that often occurs steps that need to be done is to make the cadre of managers ranging from group members. So the candidate board should be set prerequisite should never be a group committee. With a career path that must be passed by the candidates of the board, it will form the experience and maturity in managing the organization so that the acquired management who understand the needs of members and the needs of cooperatives.

Efforts to increase participation in maintaining the environment

First, the planting of well-developed and well-grown elephant grasses can help in reducing soil erosion and fodder. Thus farmers have participated in maintaining the environment.

Secondly, good livestock raising will produce adequate amount of milk and quality for people to eat so farmers have participated in helping the provision of protein and fat that we need.

Third, the cleanliness of the livestock environment with the availability of water sources and ponds of wastewater storage will produce a clean and healthy environment thus farmers have participated in reducing environmental pollution.

Fourth, the maintenance of equipment, and the hygiene of the milking forces will produce hygienic milk is a part of participation in maintaining the environment. Hygienic milk and good quality will be of high value to obtain sufficient profit so that it can improve the members of the cooperative with the insight of the environment.

SUGGESTION

To improve the members of cooperatives that are environmentally sound based on the results of the research, it is suggested that: (1) improving knowledge about the environment by doing counseling, upgrading and provision of reading materials related to the environment. Because the knowledge about the environment is one of the basic capabilities that must be owned by dairy farmers so as to create breeders of cooperative members who are environmentally knowledge environment. (2) improving the ability to manage the environment needs to be done training on the basics of management, and comparative studies to the more advanced livestock areas undertaken by the relevant fostering agencies so that the ability to manage the cooperative members environment increases. (3) Increasing participation in maintaining the environment can be done by providing training to cooperative member farmers how to manage environmentally friendly livestock business by providing examples of ways of farming management ranging from cleaning cages, disposal methods, feeding methods, milking, good milk storage. Furthermore, breeders are asked to repeat the ways that have been practiced by the coach. Thus breeders know the ways of raising good and healthy animals. (4) provide counseling with film screening tools on the health of the farm environment. By looking at what can arise if environmental stewardship is not good, then farmers will be more participate in maintaining the environment. (5) the need of concentrate in the area of livestock business is quite high therefore the co-operative should produce concentrate by using environmental amah technology and good raw material so that the quality of the product is better. (6) commitment between management and employees in managing the business to provide the best service, transparency in the determination of milk quality, pricing, debt principal installment, and provision of breeder needs. Providing accurate information about member transactions with cooperatives will encourage member participation. Besides it is no less important is to create a sense of togetherness among fellow members, groups, and cooperative managers through informal activities such as mutual cooperation, as well as sports matches to establish a sense of togetherness and sense of destiny so that every activity of all members participate actively in maintaining the environment. (7) to obtain an experienced and understanding member of the cooperative needs, then the cadre of the management starts from the group, the group management so that each candidate who becomes the manager of the cooperative one of the conditions should be a member

of the group. Thus the elected officers understand the needs of members of cooperatives and livestock business so that there is a synergy between member farms and cooperative business. (8) members and managers of cooperatives should stick to the initial concept that the establishment of a breeding area is for dairy farmers. Therefore all efforts to change the function of the region must be stopped so that the continuity of the sustainable livestock business area is still guaranteed.

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