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The Innovation Process of Modern Salt Industries at Smallholder Levels in East Nusa Tenggara, Indonesia

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Abstract:
Innovation is the implementation of creative ideas in order to generate value, usually through increase revenues, reduced cost or both. It is not easy to apply it at the smallholder levels that have heredity work pattern by natural and traditional pattern. This research aimed to study that's innovation process. This research adopted a categorized use of traditional salt industries to analyze the change to become modern salt industries. Research methodology used qualitative approach; and descriptive analysis was applied to analyze the data. Data was obtained through direct observation by interviewing 16 salt smallholder groups, and with government leaders of Alor and Sabu Regencies who acted as an innovation promoter for modern salt industries. Results showed that even though the innovation of salt processing in Alor regency have been done for more than five years, the increasing of salt production moved slowly, but in Sabu Regency showed that effect of innovation to become modern salt industries increased the regional economic significantly. The discussion of innovation process consist of the decision to adopt innovation, the implementation of innovation process, the performance of innovation impact, and the inhibitors of innovation process. There are significantly differences of innovation process of modern salt industries in two regions that was proved. This study contributes academically to get the best solution, and some improvement efforts are expected to stimulate the implementation of new idea and practices.

Keywords: *Innovation process salt industries smallholders*

1. Introductions

The total demand of salt for Indonesian domestic needed is about four millions ton per year, that was categorized for consumption and industry. While, domestic production of salt is about 2.1 millions ton – 2.4 millions ton per year, therefore, the balance to meet the national demand must be imported from other countries. It is ironic, because Indonesia is an archipelago country with potential length of coastal line more than 95,000 km but must import salt more than two millions ton per year (Indonesia Statistical Bureau, 2017).

About 80 percent of salt industries in Indonesia is produced by smallholders industries with natural traditional and simple process i.e by natural evaporating of sea water in the coastal portion of salting by sun light energy only. This process need long time (about 30 days) and low yield. Moreover, salt yielded trough this traditional process content high contaminant substance that make low quality product with 80-90 percent of Na Cl pouch. Base on its, at least there are two cause that make Indonesia must import of salt, *first,* the domestic salt production can't answer the national demand, *second*, the domestic salt quality is not as good as salt import quality that have 97 percent content of Na Cl.

From production aspect, salt production is determined by coastal land availability, long dry season, and full of sun light energy. According to those qualification, regions which have hot weather and long dry season appropriate to become the development zone for salt processing industries. From quality aspect, salt yielded from traditional process have low quality, so that need innovation of salt processing method. In the recent year, the modern technology of salt processing had have developed trough geomembrane technique. By geomembrane method, salt production process need 10-14 days only, production increased 200 percent, and more than 95 percent of NaCl content in salt yielded (Effendi, Zainuri, and Hafiludin, 2012; Iswidodo & Udisubakti, 2013).

East Nusa Tenggara is one of provinces in Indonesia with most wide of coastal line (5,700 km) and categorized as semi arid zone. The great part of this area are dominated by long dry season, so very compatible to develop salt industries. Since 2013, geomembrane technology in salt processing had developed in four districts that are Sabu, Kupang, Alor and

Nagakeo. The innovation of salt processing have taken place more than five years, but the increasing of salt product in this area moved slowly. Not all of salt development area failed, Sabu district have dramatic successfully in increasing salt product through geomembrane technique.

According to all above, the study to examine the innovation process at smallholders salt level in East Nusa Tenggara is very relevant to do in order to get the best solution in managing modern salt industries at smallholders level. Also, the study contributes academically to the understanding of limiting factors of innovation, and affects the business and social contexts, since it can guide the actions of companies, managers and experts on innovation public policies toward the economic growth of the region.

2. Theoretical Background and Empirical Framework

2.1. Characteristics of Salt Industry with Geomembrane Technology

The traditional salt industry is a simple processing and costing, but the achievement of this processing depend on sun light energy only. No effort other than stream down of sea water to the coastal portion of salting field, than, waiting product harvesting after about 30 days. There are no guaranty to get high product by this process because everything depend on natural conditions, on the contrary, sometime this process was totally failed.

Geomembrane technology is one of innovation in salt industry to achieve higher product and better quality. The complexity in managing and costing Salt industry with geomembrane technology need work procedures creatively, especially, in managing of labor, organizing of production, and maintaining of all tools. The work procedure of salt industry with geomembrane technology, as fellow in figure 1 below. One set consist of six coastal compartments with size number as in figure and geomembrane are spread out covering earth in all compartment. On the first compartment as reservoir of sea water and on the last compartment is divided in to five portions as a crystal table to take temporary of salt yielded.

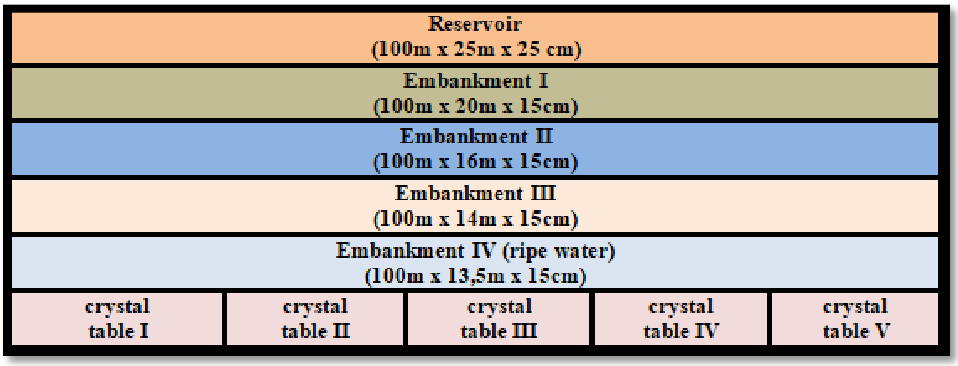

Figure 1: Model of Salt Embankment

After all portion ready to used, the first work is filling sea water to the area of salt processing. Day-1: Filling process of sea water to reservoir portion using diesel pump water.This process must be done at re flux condition and stopped when the height of water in reservoir achieved at 20 cm. Then, waiting till about 13 p.m in order to the membrane in heat condition to dislocate water from reservoir to embankment I by opening canal lid of reservoir. This transferring of water must be stop when the height of water in embankment I at 15 cm, then, water in reservoir must be fill again till 20cm. Day-2: At 12 noon, dislocating water from embankment I to embankment II and stop it when the height of water at 10 cm and all water in embankment I running all out. After that, dislocating water from reservoir to embankment I till 15 cm, then, filling sea water to reservoir till 20 cm. Day-3: At 12 noon, dislocating water from embankment II to embankment III and stop it when the height of water achieved 10 cm, then, , dislocating water from embankment I to embankment II and stop it when the height of water achieved 10 cm. After that, dislocating water from reservoir to embankment I till 15 cm, also, filling sea water to reservoir till 20 cm. Day-4: At 12 noon, dislocating water from embankment III to embankment IV and stop it when the height of water at 5 cm, then, dislocating water from embankment II to embankment III and stop it when the height of water at 10 cm, so do, dislocating water from embankment I to embankment II and stop it when the height of water at 10 cm. After that, dislocating water from reservoir to embankment I till achieved 15 cm, also, filling sea water to reservoir till 20 cm. Every transferring water from one embankment to other by opening the canal, not to for get to close it back after this section work finished. That process continuous and water filled in all crystal table at 5 cm

The second work is measuring of water density. This work implemented in every embankment and every crystal table. The result of measuring noted at “water book” content of number, date, weather conditions and note of commuting observable in every embankment or every crystal table. The recording is important to know, when salt start forming, when must add or reduce water at the crystal tables that had formed of salt, and to decide of salt harvesting. The crystal form occur when water crystal table which had formed crystals. If crystallization process had achieved dried crystal and salt formed on table, adding water from other tables with density at least 25^0 Be. Chrystal tables must always be looked after to get water supply with density 25^0 Be before harvesting.

The third work is resuming of salt table. The purpose of resuming salt table is to protect the concentrate form of salt crystals that will came difficulty in the harvesting process. This work must be done every three days and avoid the dried off or up condition in the salt table.

The fourth work is harvesting. Salt harvest being to do by gathering all salt crystal at the side of salt table, then, transferring it to the place for draining. Gathering and transferring of all salt crystal must be finished in one day only without leave salt crystal residue to keep the next harvest cycle. After harvesting, dislocating water from embankment IV to crystal table and keeping the water density in this place at 25^0 Be. The draining process at least three days until salt crystal really dried. After that, packing work and transferring it to storehouse.

2.2. Technical Change

The main interest of this research is about the production change method of smallholders salt industries from traditional method to modern method, mean of technical change. The topic of technical change is concerned with this adaptation of production to the changing circumstances, pressures, and opportunities which farm household confront. Adaptation in this context means the adoption of new or different method of production. For various reasons this may, and often does, occur deferentially between farm households, or between farm communities in different locations, and this in turn may intensify the pressure for change on other farmers or may irrevocably undermine their basis for survival as agricultural producers (Ellis, 1992).

According to Crabtree (2006), technological change must take account of the fact that some technology elements are more valuable than others. More valuable does not necessarily mean the purchase price of one technology element unit is higher than another.

Thus technical change is never just about the advent of new, more productive, methods of production taken in the abstract from the social conditions of survival of farm families. Its always also about those survival conditions themselves. And its involves far reaching strategic questions about the nature of new technology, its diffusion and adoption between different kinds of farm enterprise, and its social effects as well as its economic attribute.

Organizations must change in order to survive and there is a continuous urge for innovation (Argyris and Schön 1996; Christensen, 1997; Aldrich, 1999; Davenport and Beck 2001; Huber 2004). One approach that changes in relative factor prices induce firms to search for production methods with use less of the resource which has become more expensive. This is the basis of a theory of technical change known as induced innovation which seek to explain paths of technological development in agriculture in term of changing relative factor scarcities over time. This theory merits examination , not only with respect to the way in gets round the distinction between technical change and factor substitution, but also because it purports to provide general theory of the causes, direction, and agencies of agricultural innovation.

2.3. Innovation

Innovation is an important instrument for companies to increase their competitiveness, and thus survive in a scenario of changing and increasingly demanding markets (Benito, Platero, & Rodriguez, 2012; Kastrati, 2015). Also, Innovation is not primarily of inspiration, it is hard work (DRUCKER 2002). Innovation constitutes the activity of creating purposeful, focused change in an enterprise's economic or social potential.

The Organization for Economic Co-operation and Development [OECD] (2005) defined innovation as the implementation of a new or significantly improved product (good or service), or a process, or a new marketing method, or a new organizational method in business practices, in the organization of the work-place or in external relations. Hence, there is product, process, marketing or organizational innovation.

Technology is transforming innovation at its core, and the speed of change involves evolution, effect, and what is ahead. In the process of implementing innovations there is always the possibility of uncertainty, especially due to the presence of several individual, technological and cultural factors (Benito-Hermandez et al., 2012).

The development of technological innovation has led to the sixth generation, Rothwell (1992) mentioned that the development of technological innovation in the first stage up to the fifth has already begun since the 1950s. The generations of innovation include technology push, market/demand pull, coupling, cross-functioning, as well as integration and networking. Hasan and Adomdza (2013) added another generation, a sixth generation, known as design-driven innovation. It means to design new products whilst simultaneously creating a need for consumers. Technological change and sustainability are closely related to each other. Both factors form the innovation in order to improve the effectiveness of environmental stewardship, social development, and economic progress (Villa, 2010).

Mazolla (2013) observed that the effectiveness of the innovation process is a management issue, and it should be carried out in a systemic way, involving all the company's departments. The task of managing innovation relates to the establishment of organizational routines and to the investigation of environmental factors that affect the success of the innovative process (Tidd, Bessant, & Pavitt, 2007).

This research focused on technology-related innovations, such as the introduction of better product that require radical changes in the production process. The concept of innovation however can be seen extending far beyond radical and technology-based product innovation and try best to various approaches to clarifying the relationship between organizational characteristics and the adoption of innovation in the face of multiple dimensions of innovation.

Factors related to innovation are dynamic in nature, which makes it difficult to accurately measure and understand their impacts. Fostering factors can stimulate the implementation of new ideas and practices, while limiting factors can stop innovation, delay it or raise its costs (OECD, 2005; Souza & Bruno-Faria, 2013). Base on the last statement, a deep study about limiting factors of innovation is needed to do as one of a finding effort of management failure before, so the best solution and some improvement efforts is expected can stimulate the implementation of new idea and practices.

2.4. Conception of Research Model and Hypotheses

The proposed research model (Fig. 2) examines the innovation process of salt industries at smallholder level. In analyzing and suggesting support to the implementation of innovations we propose that it is important to recognize different analysis perspectives. Kiurunen (2009) said that the implementation of technology can support rural development. Furthermore, according to Damanpour and Schneider (2006) , Efstathiades et. al (2007) that the main factors affecting the adoption regarding agricultural projects are environment condition, social-demography situation, economic characteristics and the political factor. The environment condition, social-demography situation, and economic characteristics revers to resources availability which assures the relative advantage of the innovation and accelerates its rate of adoption by the target product. According to Damanpour and Schneider (2006), Jasinca-Biliczak (2012), the common of agricultural policy has a huge impact on the development and adoption of innovation. The regulations towards a more sustainable agriculture influence the innovation and adoption process in order to comply with the legislation with the help of technology, as it is observed by all expert groups. Generally, this is considered positively, to response the national or regional issue.

According to Klein and Ralls (1995), Klein ans Knight (2005), one of key factor of innovation-implementations effectiveness is the package of implementation policies and practices that an organization establishes. Implementation policies and practices include, for example, the quality and quantity of training available to teach employees to use the innovation; the provision of technical assistance to innovation users on an as-needed basis; the availability of rewards (e.g., praise, promotions) for innovation use; and the quality, accessibility, and user-friendliness of the technology itself.

The other factor is organization's climate for innovation implementation-that is, employees' shared perceptions of the importance of innovation implementation within the team or organization. When a unit's climate for innovation implementation is strong and positive, employees regard innovation use as a top priority, not as a distraction from or obstacle to the performance of their "real work." Both Klein et al. (2001) and Holahan et al. (2004) found that implementation climate was a significant predictor of innovation use.

The next factor is the availability of financial resources. Implementation is, of course, not cheap. It takes money to offer extensive training, to provide ongoing user support, to launch a communications campaign explaining the merits of the innovation, and to relax performance standards while employees
learn to use the innovation. Tucker (1987), Klein et al. (2001) found that financial-resource availability was a significant predictor of the overall quality of an organization's implementation policies and practices and thus, indirectly, a predictor of the organization's implementation effectiveness.

Lendel, Hitimar, and Latka (2015) defined that Innovation goals in general represent future situations that are to be achieved by a certain time-specific moment. All of the future company innovation processes should be directed towards achieving these goals. Achieving innovation goals is realized through achieving individual tasks, into which are the goals structured. Innovation goals are also the basis for the whole planning process and are the source of motivation for the employees engaged in the innovation processes. Finally, innovation goals represent the basis for control and evaluation of the realized innovation processes. The defined innovation goals can be achieve using the following resources:

- Labor (Employees, Managers, Owners…,)
- Material (Material, Energy…,)
- Capacity (Technology, Machinery, It Equipment…),
- Financial (Loans, Profit, Share Capital…),
- Other (Information, Time, Licenses…).

Factors related to innovation are dynamic in nature, which makes it difficult to accurately measure and understand their impacts. Fostering factors can stimulate the implementation of new ideas and practices, while limiting factors can stop innovation, delay it or raise its costs (OECD, 2005; Souza & Bruno-Faria, 2013). Disbelief toward innovation, in adequate of physical environment, difficulty in communication, lack of knowledge and skills, lack of support from top management, limitation of financial resources, limitation of technological resources, and fear of innovation consequences; all inclusive are limiting factors of innovation (Claudio et al, 2017).

Base on these discussions above, our proposed model is shown in Fig. 2, and the following hypotheses are suggested:

- H1: The main factors that determine the decision of companies to adopt innovation of geomembrane technology in salt industries are resources availability, and response to national or regional issue.
- H2: The difference implementation of innovation process gave the difference of impact i.e. product target, employee income, worker responsibility, project development, and project sustainability.
- H3: Salt industries with geomembrane technology as impact of innovation, financially profitable and feasible to be implemented.
- H4: The main inhibitors of the innovation process are land mastery, capital owned, lack of qualified farmers, lose of control, and shallowness dedicated of governmental agencies and employee.

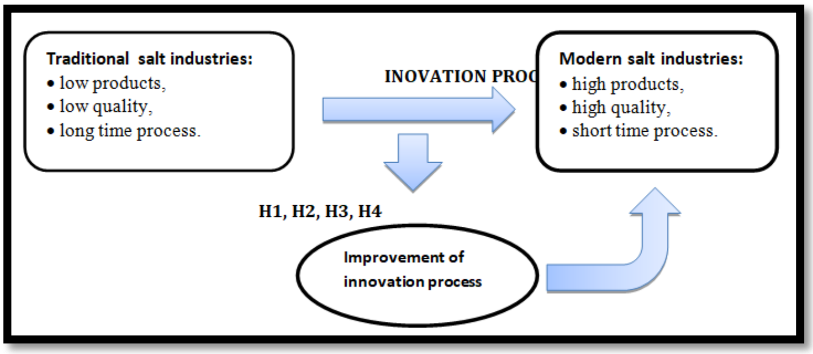

Figure 2. Proposed Research Model

3. Data and Research Method

This research is a Case Study that investigates the activities of innovation process of salt industries at farmer group level. We focused on innovation process matters in respect of four matters: first, the main factors that determine the decision of companies to adopt innovation; second, identifying the performance and the process of innovation implementation; third, examining the impact of the innovation, and fourth, determining the main inhibitors of the innovation process. To assess the relations in our hypotheses, a material research consists of primary data that realized through face-to-face interview with 16 of salt smallholder groups. The interviews were carried out in June - September 2018.

The sample was composed of groups that participated in the program. There are selected two regencies by purposive sampling. Alor and Sabu were selected because they had tried to develop the geomembrane technique in their salt industries. The respondents were the farmer of member groups themselves. Besides interviews with the member groups, an additional one was conducted with government leader of Alor and Sabu Regencies, who acted as an innovation promoter for modern salt industries. Additional resources are secondary sources from scientific publications of domestic and foreign authors. This external vision contributed significantly to this research by confirming or contradicting their opinions.

In order to verify our hypotheses, we used qualitatively analyze relations among the four matters above on the basis of descriptive analysis. This analysis is based on the direct observation on the fields, through in deep interviews with the farmers as group member and group leader. Also, in deep interviews were done with government agencies who acted the work of modern salt industries. The descriptive analyse also supported by the quantitative counting i.e cost analyze, profit analyze and financial feasibility analyze.

4. Results and Discussion

The main factors that determine the decision to adopt innovation base on information from government officer leader and the leader of farmer groups. Government leader from Alor said, "*the first time we adopted geomembrane technology in 2014 proceed from the presence of the ministry of industrial affair program. As we known, the scarcity of salt that was happen in 2013 have become a national issue. To solve this problem, every archipelago province or district was admissible to improve their salt production by practicing the innovation technology likes geomembrene or filter screw.*
Initially, we applied this program by managing 0.5 hectar only aimed to fulfill the domestic (district) salt needed, than we continued to do process again for people consumption purposed. But then, because of political process to replace government leader through general election, the condition of salt industries with geomembrane technology in Alor did not develop and stagnant for almost five years. We just start again to develop it in recent year (2018) by managing 1,4 hecta. In the next year (2019), we prepare almost two billions budget to develop salt industries with geomembrane technology".

On the other hand, the government leader from Sabu said "when the scarcity of salt exploded become a national issue in 2013, as soon as we submitted additional revised of our budget an amount of one billion rupiah for salt industries with geomembrane technology. My consideration to apply it base on the semi-arid condition of Sabu as a small island. One of properties that we have is sea water and we'll manage it to become income source of people here, also, our vision is supporting to solve the scarcity of salt issue.

Initially, we applied this program by managing one hectare land for salt with geomembrane technology aimed to increase salt productivity and at the end to increase the condition of economic society here. Because the yield of salt in the first-year production was very good (quality and quantity), so, we decided to expand this business by multiplying the business scale in the next years. Now after five years the program going on, we had have 106 hectares of salt land from 300 hectares targeted.

Even though their vision to adopt innovation of geomembrane technology are different, that are in Alor to answer their local consumption of salt, while, in Sabu to support the scarcity of national salt, but all of the information from the chief of both governments above can be simplify that the decision to adopt the innovation base on resource availability and the national issue about the scarcity of salt.

The leader of farmer groups gave a notion related the decision to adopt innovation, but in essentials, almost all of the notion are same. They are aware that to implement the innovation in their salt industry need much money and no any one of them well to do in getting capital to change their salt processing with geomembrane technology. Because of it, the government must act to cost the program and whatever the government program to increase salt production, they will support it.

All implementation management of the innovation of salt industries in Sabu district were committed by local government. Fields of salt industries are grouped in one hectare for one group. Every group have eight employees who eliminate all the jobs from filling sea water to the area of salt processing till to transporting salt bags to the storehouse. Every employee gets salary base on regional minimum wage, it is sum of 1.8 million IDR in 2018. Besides getting salary, employee also getting wage from transporting salt bags from storehouse to the trucks that will bring salt bags to the port when marketing process of salt was done.

In Alor district, the role of the government is create the program and then realize it. After everything ready, this program take over to farmer groups as implementer all activities to product salt with geomembrane technology. According to them, this present to empower farmer in order to generate their income. This program just started it (in 2018), and there are seven groups accept salt embankment sum of 0.2 hectare. Every group consist of five farmer as member. All salt embankment that had distributed to farmer groups are not in coastal area, but in one of farmer land in group. The distance between coastal to salt embankment about 50 meters – 70 meters so they must arrange long pipe to dislocating sea water from coastal to this area by supporting diesel pump water.

The productivity of Salt from this innovation in Sabu district is about 45 ton per hectare per month. So, their regional genuine income that was received from salt industry sector about 9,945 billion IDR (in 2018) , exclude 5 per cent of profit share for land owner. While, the productivity of salt from this innovation in Alor district is about 3,5 ton – 4 ton per hectare per month, or 700 kg – 800 kg per group. In Alor district, all salt that were yielded completely from farmer fare. The sale price of salt here is 5000 IDR per kg, the farmer earning about 700-890 thousand IDR per month or less than the minimum wage as employee of salt industry in Sabu district.

However, Sabu and Alor districts had implemented salt industry with geomembrane technology as impact of innovation. To create this innovation need much money for investment and operational costs. Investment costs consist of costs for purchase of geomembrane and generator pump, for set up of water reservoir, for built of salt storage house, for purchase of others equipment needed. While the operational costs consist of costs for labor, diesel fuel, and salt sacks for packing.

The cash flow analysis of salt industry with geomembrane technology in Sabu district can be seen at the table mentioned below.

Year	Cost	Benefit	Net Benefit	DF12%	PV. Net Benefit
0	997,154,025	0	(997,154,025)	1.0000	(997,154,025)
1	158,648.28 0	441,000,000	282,351,720	0.8929	252,099,750
2	182,445,522	519,750,000	337,304,478	0.7972	268,897,065
3	209,812,350	567,000,000	357,187,650	0.7118	254,113,820
4	241,284,203	614,250,000	372,965,797	0.6355	237,026,507
5	277,476,833	693,000,000	415,523,167	0.5674	235,779,004
NPV = 250,887,414 NET B/C = 1.25 IRR = 21.14					

Table 1: The Cash Flow Analysis of Salt Industry with Geomembrane Technology in Sabu Regency (Business scale: 1 hectare; product price: 1,400 IDR).

The total cost of investment is about 998 millions IDR per hectare and the total cost for operation is about 159-277 millions IDR per hectare per year. The net benefit receipt are about 283- 416 millions IDR per hectare per year. According to investment criterion in five years cash count, this geomembrane innovation project financially profitable and feasible to be implemented with the net present value (NPV) is positive, the value of net benefit cost ratio is 1.25 (mean: every budget expenditure by 1 unit price, it will give benefit by 1,25 unit price), and the value of internal rate of return is 21.14% (more than social discount rate of 11.5%). After accounting of net cash flow, it procurable that pay back period of investment cost is after three years, one month, and 24 days.

The great part (78.42 per cent) of operational cost is for labor wage and all labor were taken from local people. As explained previously, all management of salt industry with geomembrane technology in Sabu regency was done by local government. This is to lay train people accustomed to the new technology so they have a better skill when the local government empower them to manage those projects in the future.

While the cash flow analysis of salt industry with geomembrane technology in Alor district was shown at the table below.

Year	Cost	Benefit	Net Benefit	DF12%	PV. Net Benefit
0	100,000,000	0	(100,000,000)	1.0000	(100,000,000)
1	250,000	21,000,000	20,750,000	0.8929	18,526,786
,2	.300,000	21,125,00	20,825,000	0.7972	16,601,563
3	350,000	21,150,000	20,800,000	0.7118	14,805,029
4	400,000	21,175,000	20,775,000	0.6355	13,202,888
5	500,000	21,200,000	20,700,000	0.5674	11,745,736
6	600,000	21,215,000	20,665,000	0.5066	10,469,532
NPV = -14648466,52 NET B/C = 0.85 IRR = 10.00					

Table 2: The Cash Flow Analysis of Salt Industry with Geomembrane Technology in Alor Regency (Business Scale: 0.2 Hectare; Product Price: 5,000 IDR)

The table above showed the lower of operational costs because the management did not calculate cost of labor, and only figured costs for diesel fuel and salt sacks for packing. In the smaller scale of farmer salt industries (0.2 hectare), yielded the lower product so this management model only give earning about 700-890 thousand IDR per month.per member group. Even though the sale price is higher (5000 IDR per kg), this project is not feasible to do due to the net present value is negative, the value of net benefit cost ratio is 0.85 (less than one) and the value of internal rate of return is 10.00% (less than social discount rate of 11.5%).

All information above also showed that the business scale determined the profit level. The fragmentation of business scale become a smaller to distribute it for the more farmer did not generate income significantly. For smallholders, especially in this case, become employee in the salt industries is better choice than a manager in small business. This situation can be concluded that the key attribute of farmer business have long-term survival than farmer empowerment.

In line with the implementation of innovation process and their impact showed that innovation is focused change in an enterprise's economic or social potential (Drucker 2002). According to Scozzi and Garavelli (2005), Innovation processes have a cognitive and interpretative dimension. These comprise analysis of the involved actors, cognitive characteristics, perceived roles and roles assigned to other participants. To address cognitive problems, it is necessary to consider cultural factors. Therefore, the difference implementation of innovation process gave the difference impact.

The important strides in understanding the process of innovation implementation, Klein and Knight, (2005) called up about questions remain. How does success or failure at implementing an innovation in one team or location spread through an organization or community? Do units that succeed in implementing one innovation succeed in implementing others as well? Though questions remain, the growing innovation-implementation literature draws needed attention to the challenge and the importance of effective innovation implementation. In the absence of effective implementation, the benefits of innovation adoption are likely to be nil.

These results are important because they dig down into the underlying causes of a broadly accepted relationship; The small business scale make difficult for industries or organizations to cost efficiently, so, there are limited to reach profit. On the other word, the greater a business's scale, the longer it will survive in the long-term. Analogously with one of research conclusion about greater size has on business survival from Bercovitz and Will (2007); they said that scale provide benefits via a combination of factors that one might think of as primarily 'economic' and others that are more 'organizational' in nature. The benefits of financial resources align with traditional economic arguments, while the benefits of routines and external ties add organizational components to more economic arguments.

Research result also point out the differences of innovation process in increasing salt product through geomembrane technique and their yield in the different place, that are, moved slow or fast, fail or successful.

This situation indicate there are many inhibitors of innovation process. According to our observation, the first factor limited to start the innovation of modern salt processing is capital owned by the farmers. The lack of capital owned is limitation of financial resources. According to Claudio et al (2017), Bozig and Rajh (2016); Dermibas et al (2011); the limitation of financial resources make difficulty to access and to effectively use financial resources needed for innovation, such as: 'lack of resources and low capacity to get credit'.

Salt processing with geomembrane technology need much money to invest it, so that planning is impossible to do by the farmer. Base on it, the innovation of modern salt processing were done by local government through the development program of smallholders salt industries. Because of it, the dedication of governmental agencies is very important. In fact, according to our observation, we met shallowness dedicated of governmental agencies and employee. Also, in our observation on geomembrane salt embankment area in Alor regency showed the very bad condition i.e salt crystal had formed from reservoir till all tables, that condition indicated that employees here didn't work as a procedure or schedule that was caused by lose of control and lack of commitment to innovation. According to Seok (2008), the employee commitment is key to encouraging innovative behaviors among employees. Also, reluctance to allocate resources needed indicate lack of commitment to innovation of employees (Claudio et al, 2017).

5. Conclusion

Through our analysis, our hypotheses were verified. We have begun to identify the practices and characteristics that allow regions to overcome the challenges of innovation implementation. Clearly, the government leaders cannot close the book on an innovation after they have decided to adopt it. To ensure targeted users' sustained and skillful use of innovative technologies and practices, they must devote great attention, conviction, and resources to the implementation process.

In this analysis, The management in Sabu regency seem more effectively in using their resource power than the management in Alor regency. They enhance creativity of their members who involve on their new development process and they produce a product which is marketable. This result implies that Sabu regency has many potential opportunities to use resources in their own industries. This finding consistent with our belief that long-term survival is the key attribute of farmer business than farmer empowerment.

As to the causes hindering innovation, excessively lose of control and lack of commitment that indicate of shallowness dedicated of governmental agencies and employee. Lack of commitment make reluctance to allocate resources needed. Therefore the employee commitment is key to encouraging innovative behaviors among employees. Then, high cost and lack of capital owned also cause hindering innovation process in the modern salt industry.

The results of this study show the impact of innovative activities on industrial performance especially on skill person capability, followed by impact on quantity and quality product of salt. On the other hand, the innovative activities create new incomes from many sectors mean it have economics multiplying effects for regional development.

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