

Managing Social Risk and Impact Through Stakeholder Engagement and Integrated Social Development Program: A Case Study of Sumatera Geothermal Project

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ABSTRACT

Project development, which is either conducted by the Government or private sector often has an adverse impact to the environment and the social aspects that may lead to loss of income sources or other means of livelihood for the Project Affected Peoples (PAPs). According to the national and international regulations, the project's initiators are required to avoid environmental damages, social conflict, and severe long-term hardship toward the local community and ensure the appropriate measures are carefully planned and carried out through the project's Environmental and Social Management System. Considering that project development generally affects the local community, a program of mitigation of environmental and social impacts needs to be established to reduce the adverse impact of the project activities on the local communities. The environmental and social impact mitigation measures are designed to ensure improvement or at least restoration of the social and ecological conditions. The key challenge is how to balance between project investments with the potential risks, adverse impacts, and social conflicts in the local communities. States, parastatals and companies making investments must take increased responsibility. Through the Involvement of Local Institution and Collaboration with Geothermal Industry, the implementation of social risk mitigation processes and impact mitigation expected could be implemented in a more participatory way and be more effective. An example is a geothermal project in Solok Selatan region in West Sumatra, Rantau Dedap in South Sumatera, and Rajabasa in Lampung, Indonesia. The project has established in collaboration with the local institution, namely Community Committee, which specializes in managing local recruitment, local supplier, and grievance mechanisms. This Community Committee consists of Head of Village figures covered in the project affected area. The role of Community Committee is to connect the interests of the project and the local constituents, which are managed through the local customs and wisdom. In addition, the company also runs the Integrated Social Development Program to boost up the Livelihood of the Project Affected People. By doing these measures, the company will be able to ensure local community involvement and participation in the project and obtaining the "Social License to Operate". In this paper, it is referred to as "a perfect blend of customary stakeholders and corporate governance".

1. INTRODUCTION

The project's development, either conducted by the Government, donors, or private sector, often cannot be spared from the activities of land eviction or land acquisition. Land acquisition process expected will entail physical (relocation or loss of shelter) and economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) to the affected parties, since some of the areas to be secured for the project are occupied by the local inhabitants. On the other hand, in the view of international regulations, the project's initiators are required to avoid severe long-term hardship, impoverishment, and environmental damages and ensure the appropriate measures are carefully planned and carried out through the project's Environmental and Social Management System.

Considering project development generally causes effects on the local community, a program of mitigation for physical and economic displacement needs to be established to reduce the adverse impact of land acquisition or relocation on the community's livelihood. The economic displacement mitigation is designed to ensure improvement or at least restoration of the landowners' or land occupiers' livelihood. The key challenge is how to balance investments requiring the acquisition of land with the risks such projects can pose to local livelihoods, especially to the vulnerable person. Increased responsibility must be taken by States, parastatals and companies making investments, as well as those States and communities on the receiving end. The Project development initiator is required to develop an appropriate resettlement and livelihood restoration program for the management of project-related investments which ensures they are inclusive, transparent, accountable, equitable and sustainable.

2. INVOLVEMENT OF LOCAL NORM ON SUPREME ENERGY PROJECT IN SUMATRA

The cultural diversity and uniqueness of Sumatra could be attributed to its geography as one of the largest islands in the Indonesian Archipelago and its proximity to Malaysia and other ASEAN countries. In West Sumatra, the matrilineal culture plays a very important role in their way of lives, while in South Sumatra, patrilineality plays a more important role. In Rantau Dedap area where Supreme Energy is running their Geothermal Power Plant Project in Semendo Area, the matrilineal system is applied. With these diverse culture, Supreme Energy puts a different approach in dealing with the community issue.

2.1 Involvement of Adat Norm in Muara Laboh Project of West Sumatra

The Geothermal of Muara Laboh project, in Solok Selatan District, West Sumatra, is one of the largest geothermal energy projects in the world. Since its inception, the project has worked closely with customary institutions and local government, especially in terms of project socialization, public consultation, land acquisition, recruitment of local workers and suppliers, grievance mechanisms, Corporate Social Responsibility (CSR) programs and so on.

To ensure that all local norms and customs are being respected, Supreme Energy's project management consulted with the *Nagari* at the Customary Union Institute (KAN). In Minangkabau language, the *Nagari* is the guardian and preserver of their local custom and culture. KAN consists of indigenous elders and their hierarchies are as follow: *Penghulu* (elder of each tribe), *Manti* or *Cadiak Pandai*

(advisers), *Malin* or *Alim Ulama* (Religious Teacher) and *Dubalang* (security guards). The main decision-maker in KAN, however, is the *Wali Nagari*. In addition to taking care and preserving customs, KAN also serves as a justice institute. In a case of dispute, KAN's decision are absolute, especially in cases of *sako*, *pusako*, *adat* and *syarak* violations. Before brought to the KAN institute, in the case of *sako* or *pusako* lesser violations, these are usually resolved by *ninik mamak*. If this dispute occurs in the tribe, it will be first address by the tribe's elder. If cases are still not resolved, it will eventually be brought to the KAN institute.

For the mechanism of engagement with local government institutions The Company also undertakes to coordinate and collaborate with *Wali Nagari* institutions. *Wali Nagari* is a local leader in the scope of a village-level in a hierarchical structure of government in Indonesia. *Nagari* is the territorial unit and government, which became the basis of the Minangkabau kingdom in the past. To enhance the collaboration between the project and the customs of the local community in the project, the Company has also facilitated the formation of the *Nagari* Committee Forum in July of 2016. The members consist of prominent Guardian *Nagari* covered within the affected project area. The purpose of the establishment of the Committee is to bridge the needs of the Company and its surrounding community.

The establishment of this *Nagari* Committee Forum is also a reflection of the core values that Applies to Supreme Energy. Essentially, corporations are committed to achieving social justice for all stakeholders. One way to create a sense of justice for all stakeholders is to engage stakeholders in finding solutions or for decision-making that will impact local communities through deliberation and consensus mechanisms. This is of course is also in line with the principle of *nan sakato* applicable to the Minangkabau society who strongly uphold the principles of deliberation and consensus in making a decision in the community. The tradition of deliberation and *mufakat* is as outlined in the *Minangkabau adage*:

*Kamanakan barajo ka mamak,
Mamak barajo ka penghulu,
Panghulu barajo ka mupakaik,
Mupakaik barajo ka alua jo patuik.*

Meaning:

*Nephew to the mamak,
mamak baraja to penghulu,
panghulu royal to consensus,
Consensus-minded to groove and worthy.*

2.2 Involvement of Local Norm in Rantau Dedap Project of West Sumatra

Almost 100% of Semendo population makes their living from traditional agriculture. The agriculture area was quite fertile, and located 900 meters above the sea level. There are two main agriculture commodities from this area. First, Robusta Coffee, with the total production per year amounting to 300 tons, and rice. The area is also considered as the main source of South Sumatra rice production. Currently 5,000 hectares of productive cultivated land are harvested once annually.

The local tradition and culture were heavily influenced by Islam culture. Rebana music, folksong and traditional dance were also influenced by Islamic Malay culture. The daily language used called Semendo language, which uses the vocal "e" at the end of each word, similar to Malay language. Semendo Tribe has a distinctive traditional house and martial arts culture called Kuntau, which is usually performed during a wedding ceremony

One of the local traditions that is still held deeply in the tribe was called "*Tunggu Tubang*" which sets the rule of distributing the inheritance within one family, where the inheritance would go to the eldest daughter. The inheritance would consist of farming area, houses, which distribute from generation to generation continuously. This resulted in the encouragement for the boy of the family to migrate to outer regions.

If in Minangkabau, they have Ninik Mamak that unite in *Nagari* Customary Union Institute (KAN), Semendo has the same position called *Meraje*. This *Meraje* will gather in adat norm called *Lembaga Adat Semende Meraje Anak Belai* but only for the tribe itself. This institution will monitor and control in their own tribe only.

3. MANAGEMENT OF COMMITTEE

The Committee Forum was established and facilitated by Supreme Energy. Organizational forum of this committee has the organizational structure as follows.

Organizational Structure in Muara Laboh :

- Patrons:
 - Head of in 2 Subdistricts around Geothermal Powerplant's Project in Muara Laboh (Pauh Duo & Sungai Pagu)
 - Kerapatan Adat (Ninik Mamak) Subdistrict Sungai Pauh Duo & Capping
 - Head of Muara Laboh Military Office
 - Head of Sungai Pagu Police Office
- COMMITTEE Members :
 - 3 Wali Nagari as Pauh Duo District Representative

- 2 Wali Nagari as Sub-District Representative of Sungai Pagu.

Organizational Structure in Rantau Dedap:

- Patrons:
 - Camat in 3 Subdistricts around Rantau Dedap Geothermal Powerplant
 - Head of Military Office Semendo
 - Head of Police Office Semendo
 - Head of Military Office Kota Agung
 - Head of Police Office Kota Agung
 - Head of Military Office Dempo Selatan
 - Head of Police Office Dempo Selatan
 - Religious Leader of Semendo Darat Ulu
 - Youth Leader of Semendo Darat Ulu
 - Religious / Community Leader of Semendo Darat Ulu
 - Youth Leader of Semendo Darat Ulu
 - Religious / Community Leader of Kota Agung
 - Youth Leader of Kota Agung

Forum Committee members Nagari consists of Wali Nagari who represents the District that are in the Work Area of Geothermal Energy projects Muara Laboh (SEML). The committee has a maximum of 5 people who are determined based on a consensus between the sub-district in the working area of the project. However, the Company also reserves the right to review candidates for Members of the Committee recommended by the Sub-district Heads. After the Company has given the approval of the Membership of the Committee, PT SEML issues a Decree approving the stewardship of the Nagari Committee Forum. The term 'PT' refers to *Perseroan Terbatas*, which refers to a limited liability company in Indonesia.

In carrying out its functions to conform to the expected objectives, the main Tasks of the Nagari Committee / Community (in Rantau Dedap) were prepared as follows:

A. Duties of the Committee:

- Coordinate and communicate continuously to bridge the Company's needs with the community;
- Communicate / disseminate information provided by the Company and / or that has been approved by the Company and is intended for public consumption;
- Helping to prepare the local hiring process and verification of local suppliers according to the needs and demands of the Company;
- When requested by the Company, the Committee may facilitate the Company's needs in accordance with the capacity and scope of the Committee's territory;
- Socialize, coordinate, and supervise CSR programs implemented by the Company.

B. Implementation of the Duties of the Committee

- Hold meetings on an ad hoc basis tailored to the conditions and needs of the Company in the field;
- Together the Company and the Local Government hold a stakeholder meeting every October used to discuss, or discuss and formulate the Company's CSR programs for the following year;
 - Create a data base / list of prospective workers from each *Kecamatan / Desa* (village), in accordance with the territorial authority covered by the Committee;
 - The Committee and its members shall keep the commitment and confidentiality of the information provided by the Company.

3.1 Control Mechanism

The members of the Nagari Committee, in performing its duties, must comply with the rules and codes of ethics applicable in the Company Considering the formation of Nagari Committee Forum implemented and facilitated by PT. SEML in order to meet the needs and interests of the Company. This is in line with the main duties of the members of the Committee as liaisons and representatives of the Company with local communities. Therefore, from the very beginning of its formation it has been agreed that SEML party has the right to terminate an association / terminus what if known and proven that among the members of the Forum Nagari Committee has made rules and code of ethics in the company. The terms of termination / termination in the membership of the Forum Committee are as follows:

Membership Committee:

- Members deliberately violate the rules and procedures of the Committee and the Company ;
- Not active in attending meetings and discussions for no reason reasonable and acceptable to the Company within two (2) times ;
- Change of employment status to become a Company employee ;
- Withdraw from the membership of the committee ;
- The status of duties and authorities has changed / moved out of the territory it represents ;
- Died.

Termination / Dissolution / Freezing of the Committee Forum

- The organization is not pro-actively facilitating and assisting the Company;
- Have other objectives and / or perform actions that are inconsistent with the objectives of the Company ;
- Its existence does not provide conditions conducive to the relationship between the Company and the surrounding community;
- The company ceased operations in the area.

The Committee's propagation mechanism can only be done by the Company by submitting a letter of dissolution of the Committee and reported in writing to the Bupati/ Camat. The existence of mechanisms for dismissal and dissolution of membership and institutional Committee Forum is intended as a control mechanism so that the roles and functions of the members of the Wali Nagari appointed in the Committee can perform their duties and functions in accordance with that expected by the company.

In addition, the control mechanism on the performance of the Committee Forum is also structurally carried out through the role of the Camat, who is a member of the advisory board. The role of the Camat is to represent the hierarchical structure of formal government, i.e., as the superior of the Wali Nagari. In addition, from the beginning of its formation Camat also has a role in selecting and determining Wali Nagari candidates who will become members of this Wali Nagari Forum. The role of the control mechanism of the Camat is to ensure that the roles and duties of the designated Wali Nagari must also be aligned with the duties of the government at the Nagari level.

The mechanism of control that is not less important is as run by the institution Kerapatan Adat Nagari (KAN) as a representation of the figures Ninik Mamak in District Pauh Duo & Sungai Pagu. In structural KAN role as well as an advisory board member of the Forum Committee Wali Nagari. In this context, the control mechanism being played by the Institute KAN is representation of traditional authorities and indigenous stakeholders as well as representatives of the local communities. In order to understand more thoroughly, the role of KAN institutions in carrying out the functions of the social control mechanism and the representation of the interests of the local people towards the existence of the Project will be described below.

As mentioned earlier, the Customary Union Institution (KAN) consists of indigenous elders consisting of elements of *Penghulu* or *datuk* of each tribe in a region of Nagari. The position and role of a *Penghulu* is so important in the lives of people in West Sumatra.

In the ward of his people a penghulu will act as a chief or leader spokesperson, meaning the person who first or first opens the conversation. In doing a good job, a penghulu must perform in front as a pioneer and inspirator, in accordance with the adage:

Mairik parang jo barani

Mairik karajo jo usaha

Meaning:

Bring a brave war

Bring work with effort

In addition, a penghulu should also be a source of peace, becoming the caretaker of the people's welfare, pioneering development in all fields. Therefore, if a person has been appointed as a penghulu or datuk, then his position has been lifted off and when walking has taken a step ahead of all members of his people. To a penghulu or datuk should not be pronounced harsh words, let alone words of contempt. The humiliation of a penghulu or datuk is the same as insulting all the members of the camel and all the other kamam mamak. In short, Penghulu is a shelter and a place to complain for the child and his nephew. The prince is a symbol of the parent according to adat; went to the place to ask questions and to go back to the place of mercy for his people and the people in Nagari.

4. STAKEHOLDER MANAGEMENT

PT Supreme Energy is committed to carrying out its business and creating sustainable stakeholder value following the highest standards of business ethics and social behavior. Abiding by the corporate values Supreme Energy puts a strong focus on respecting people, community, culture and the importance of trust, relationships, teamwork and harmony as well as engaging the stakeholders in a way that supports building confidence in our work and mutual understanding.

PT. Supreme Energy acknowledges that management decisions and operations can potentially affect a wide range of individuals, communities, businesses and organizations that are within the range of its project operation. Successful engagement depends on understanding **why** an organization is engaging (the purpose), **what** issues to engage on (the scope), **who** needs to be involved in the engagement (ownership, mandate, and stakeholders) and **how** to communicate appropriately and create balance values for our stakeholders (method). Stakeholders are those 'external' to SE operation who have an interest or can influence project operations, such as affected individuals and communities, local government authorities, non-governmental and other civil society organizations, academia, media and other interested or affected parties. Stakeholders such as contractors, suppliers, distributors and customers of SE, who are considered 'internal' to SE operational, as they are part of the core business function, subject to national regulations and established company policies and procedures.

Stakeholders are defined *as people or entities that are affected or may have an interest in the Project*. Stakeholders are individuals or groups of people who have an interest in and/or can influence any decision or activity of the Company.

External stakeholders are those external to core business operational activities, such as direct and indirect affected individuals and communities, local government authorities, non-governmental and other civil society organizations, local institutions and other interested or affected parties.

Internal stakeholders are employees, suppliers, distributors, contractors and customers as these interactions are subject to national laws, regulations, company policies, and procedures as part of core business activities.

The forms of engagement may vary from one-one meeting through public consultation.

5. INTEGRATED SOCIAL DEVELOPMENT PROGRAM

One of the company programs was the Integrated Social Development Programs ("ISDP"). The program set the target to improve the livelihood of the Project Affected People (PAP). The PAP were already classified as:

1. Directly Project Affected People (Priority-1 & Priority-2)

This category will fall to those who are directly impacted by the Project land acquisition and having more than 10% of total productive land acquired (and are thus significantly impacted by land acquisition), based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB.

The comprehensive definition follows:

- a. *Priority 1 (P1): those who are members of Affected Households (AHs) directly impacted by the Project land acquisition and having more than 10% of total productive land acquired (and thus significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable AHs regardless of the extent of impacts*
- b. *Priority 2 (P2): those who are members of Affected Households directly impacted by the Project land acquisition and having less than 10% of total productive land (and thus not significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB*

2. Indirectly Project Affected People (Priority-3)

This category falls to those who are indirectly impacted by the Project (i.e., residents of villages and hamlets within the Project area as well as residing within the WKP)

3. Women and Vulnerable People

During the land acquisition process, the Company has identified 121 directly affected households that have been considered as vulnerable groups of people in the project area. The basis for vulnerability considerations are as follows:

- a. Households with incomes less than the South Sumatra Provincial Rate for full term employment (IDR 30 million per annum) and lies under poverty line (IDR 391,178 per month per capita)
- b. Women-headed households without any other earning members
- c. Households headed by elderly, or with disabled children

In addition, the Woman Organization (PKK in Bahasa) in Pagar Alam City, Lahat and Muara Enim Regency is included as indirectly affected stakeholder of this project.

5.1 Involvement of Local Institutions in Improvement of Project Affected People Livelihood

Rantau Dedap farmer's especially direct affected people (DAP) are mostly situated at Rantau Dedap. People have mono-culture livelihood, which depends on the coffee production. Undoubtedly, the project's existence has resulted in direct impact on the lives and livelihood of the landowners. Thus, empowerment of the people as landowners as well as affected people directly affected by SERD project is an important part of the effort in improving the livelihood of the households and to push it to become better and more independent. Empowered and independent people are expected to be able to achieve their goals. Almost all of the people expect to have better livelihoods so that they can provide for their family's economy. This effort is the commitment of PT SERD to show its function to the society living in the area.

PT Supreme Energy Rantau Dedap (SERD) is committed to empower the people, particularly people affected by the geothermal project. The commitment is fulfilled by conducting agriculture training and practices as well as other activities. The agriculture training focuses on coffee plant and other plants cultivated by the local. The stress on coffee is due to the fact that most of the affected people in Segamit and Tunggul Bute villages have their lands planted with coffee. Based on the Impact Monitoring Report, first phase of coffee training has resulted in some social economical changes of the landowners participating and implementing the training. Nevertheless, there are still more landowners that have not received the training and have not implemented the training received. Therefore, at this stage, to make the training for the affected people effective, strategies are made by creating several target groups each consisting a maximum of 25 affected people. The group will be given intensive training and the implementation monitored as well as the results are reported for analysis as to how effective the training is on the economic and social lives of the affected people. Additionally, to add to their income and other alternative livelihood, the training also includes horticulture training.

The attention to crops other than coffee is an effort to provide the people with another source of income. Some of the people cultivate crops other than coffee. There are those who do paddy, vegetables, and fruits. These plants produce results, but in terms of production capacity, the result is not to the maximum. The training provided is expected to yield knowledge as well as confidence and motivation to the people to the importance of knowledge and confidence in cultivation, processing and marketing produce, particularly coffee produce. The training that includes Q&A sessions is expected to draw important feedback in terms of the kinds of problems the people are facing and their expectations of the follow-ups of the training.

Purpose

1. To provide knowledge, skills in agriculture, particularly coffee and its post-harvest process.
2. To seek information on the problems faced by farmers in conducting cultivation of coffee or other types of plants.
3. To seek information on the hopes of the farmers and farming groups for similar activities or follow-ups related to people empowerment.

Benefits

1. The training is expected to increase the knowledge of the farmers on coffee cultivation and how it can increase their income.
2. The training is expected to increase their confidence in the importance of harvesting ripe coffee and processing the coffee beans using wet processing system.
3. The training has fostered interest of the farmers to do important things such as getting Bank loans.
4. Foster sense of trust and support between PT SERD and the people for their benefit and common progress.

5.1.1 Implementation Method

The training begins by logging participants based on the previous data. Special participants of the training are the people who have been related to PT Supreme Energy Rantau Dedap at the time of planting transfer on the lands used as the facility of PT Supreme Energy Rantau Dedap.

The training is given in two phases. First, the training materials are delivered indoors followed by discussion or Q&A. Second, it involves field work to implement parts of the theory given. The field practice is done around the settlement or plantation and is easily accessible by the people. It is expected the plantation is visible by the people around the location of the field practice. It also includes discussion to see directly problems occurring in the plantation.

The training is deemed successful. It can be seen from the participants involved in both villages (Segamit Village, Semendo Darat Ulu Sub-district, Muara Enim District and Tunggul Bute Village, Kota Agung Sub-district, Lahat District). All invited participants were present. The Sub-district apparatuses consisting of representatives of the Head of Sub-districts, Head of the Sub-district Police and the Head of Regional Military also attended the training. Village apparatuses, forestry officers and popular figures also attended the training.



Figure 1: Coffee cultivation basic training by UNSRI expert

Previously, the farmers mixed both red & green picking during harvest, which lead to poor green bean quality, increasing post-harvest processing time due to longer drying to get the right moisture content according to the international standard.

Directly affected people located scattered across the 4 villages: Rantau Dedap, Tunggul Bute, Segamit & Karang Endah.

Current farmer's selling price for their coffee is IDR 18,000-20,000 based on existing coffee quality.

Some of the coffees are taken as samples for further analysis & market development. Robusta coffee is the most cultivated variety of coffee in the area of Segamit, Tunggul Bute and Karang Endah. Most of the villagers get their livelihood mainly from coffee harvest. Most of the villagers became coffee farmers more than 10 years ago and many have inherited their plantation from their ancestors.

Most coffee plantations are quite well maintained to prove that its farmers conduct good agricultural/ coffee practices such as topping and pruning of the unproductive branches. Only several farmer didn't trim off their plantation due to the lack of resources. Unfortunately, most of the farmers do not practice the selective harvesting of red cherry. Most of the farmers are picking both red & green cherry, which is categorized as low coffee quality. Farmers know about the information that red cherry picking is the best process for coffee handling. Unfortunately, local buyers do not count the good quality of bean. On this situation farmers decide not to make the selective picking of red cherries.

The last crop had less production due to the bad weather conditions; the rainy season during blooming of coffee flowers prevented the development of its cherry.

Most of farmers sell their bean to the local intermediaries with low prices for commercial grade coffee.

Farmers owning small pulper machine are identified, meaning that it makes the drying process much shorter in the highland area in which intensive raindrop frequency occurred in certain months.

There is no other better option of marketing for good quality of bean, therefore farmers could not get better revenue from their harvest.

There is no incentive for farmers to improve their soil plantation fertility because the price of the harvest will not compensate for increased costs.

There was another interesting issue that picking red bean may increase coffee stealing in the village (interview with farmers in Tunggul Bute).

There is one processing unit of coffee pulping with good drying processed unit in Yayasan hamlet, Segamit. On interview it was revealed that marketing is still on development process. Sometimes cooperatives won't give a good price and do not have resources to buy. However, the second batch of coffee collected during the survey showed that two samples showed it harvested mix of unripe and red cherry. Another one sample still on drying processed.

The samples received and cupping testing showed that coffee originally has very much potential to be classified as grade 1 or fine robusta. But farmers need to have technical assistance on processing and more importantly a better or higher price as compensation or incentive should follow. Therefore, alternative market channelling is needed.



Figure 2: Over 100 years old coffee tree, a potential source of superior seeds of Typical Semendo

5.1.2 Evaluation

a. Robusta

Robusta coffee is collected from several farmers and intermediaries in green bean condition.

Quality analysis is based on physical characteristic and current coffee quality grade is grade 2-3 based on SNI (Indonesian National Coffee Standard). These 2-3 physical grade characters are dominant in primary defect (black bean, off flavor and high impurities).

The current green bean reprocessed to improve the physical quality by sorting, further drying and roasting. Sensory evaluation deployed by cupping test & application of coffee serving: *tubruk*, espresso and cappuccino.

Table 1 Result of curatorial analysis of existing Robusta Green Bean

Sample	Grade	Treatment	Remark
<i>Biji Beras</i> Robusta	Grade 2-3 physical Grade	Drying to ensure moisture content at 11-12%. Sorting out defective beans. Up grading Grade 1-up	Upgrade quality meets local market quality For export quality need advance processing "polishing"
<i>Biji</i> Robusta (Roasted)	Sensory Analysis : - Roasting at medium level to dark - May meet as fine grade	Test Cup Good balance, complexity, chocolate, spicy, low bitterness, long finishing, clean cup Tubruk Serving Ideal with average thickness and sweet after taste Espresso Serving Delicious, comfortable, sweet and consistent Cappuccino Serving Strong flavor, delicious, completely blended with milk, comfortable & sweet after taste.	Upgraded quality bean profile meet as single origin coffee or as blending component

b. Arabica Coffee

Arabica coffee planted in several blocks of coffee field in Semende with limited area. Based on site survey observation at Akram processing area:

- West Sumatra origin, around Pagaralam
- The farmers have less knowledge on several Arabica varieties
- Some farmers are practising red bean picking
- Fully wash process implemented at Akram processing at Rantau Dedap
- Pulper & Drying Facility are deployed.

Table 2 Result of curatorial analysis of existing Arabica Green Bean

Sample exist	Quality Analysis	Treatment	Notes
Arabica Grain Coffee Arabica Green Bean	Normal quality as grain coffee as a result of wet process No indication of extended fermentation (spoil or fungi) High moisture content >30%	Drying grain coffee to reach moisture <20% Hulling	Coffee sample has potential special market for local roaster
Arabica Roasted	Sensory Quality : - Roasted at medium level - Has potential as fine grade	Test Cup Sweet, fruity , good balance, chocolate, spicy, fruity, good finishing, clean cup Kopi Tubruk Serving Strong character, balance, sweet, fruity V60 process Sweet soft, fruity	Upgraded Quality Coffee has profile as single origin or blend component

5.1.3. Cupping and Sensory Training (Physical & Sensory Aspect)

A training program for quality champion delivered on 2018, this training designed to deliver quality understanding both physical and sensory quality.

**Figure 3: physical and sensory training**

These trainees representing each groups, upon completion this training, are expected to share their knowledge to other members of the groups and play as quality control role among the groups.

From the training, we identify there are 4 four participants that could be local quality tester, since they have a good Physical & Sensory knowledge and talent.

5.1.4. Market Development

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Based on market study of upgraded quality green bean & sample of green bean accepted by several potential buyer:

Table 3 Potential market for raw green bean

Potential Buyer	Market Orientation	Cooperation term	Remark
PT. Fortunium	Export to China & South Korea	Supply Chains based on trade contract 1-2 year	Grade 1 SNI Tonnage : 5-10 MT Payment Scheme : advance payment Note : LOI attached
Rumah Kopi Ranin	Export market alternative micro lot Domestic Market	Post-harvest upgrading (contract farming)	Grade : fine grade Quantity : 250-300 kg/6 month
Other trader (Indokom)	Domestic Market/Export Market	Regular Term	Grade : Commercial : 200 ton minimum for Arabica

The current offtakers of the product are:

1. Rumah Kopi Ranin – Bogor
2. Supreme Energy Rantau Dedap Office – Jakarta
3. Marubeni Office - Jakarta

From baseline study that had been made on 2016 and the series of training in 2017 – 2018, the livelihood of the Semendo people had been increased significantly on coffee production aspects. It shows during the grand harvest 2017 and 2018 the production could reach 3000 – 4000 kg / ha.

The quality of the bean had been increased, the water content was decreased from 17 – 18 % to 14 – 15 %, but still needs to improve until 12 – 13 % as per Indonesian Standard. The size grading also improved since the Company also supports them with manual coffee size grader. The farmers continues to pick only red cherry for best grade coffee bean.



Figure 6 : Coffee Quality in Rantau Dedap Coffee Station

6. CONCLUSION

The right identification of stakeholder and the approach method are the keys to success on managing social risk and impact in the development of geothermal project. Gathering the support from local institutions, especially customary and religious groups, is another baseline to execute and operate the geothermal power plant. Cultural perspective is the most important role in engaging with the stakeholders, while the relationship with the local government is top priority.

Supreme Energy has a lot of experience on the social disturbance, public distrust, negative issue in social media and so on, but the effective way to prove that geothermal project brings a lot of benefits is doing the right Stakeholder Engagement including delivering the right Integrated Social Development Program. Do the right way by the right people....

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