GENDER MAINSTREAMING IN THE DEVELOPMENT OF DIENG AND PATUHA GEOTHERMAL FIELD, INDONESIA

Agdya Pratami Putri Yogandari[1], Aulijati Wachjudiningsih[2], and Supriadinata Marza[3]

PT Geo Dipa Energi (Persero), Jakarta, Indonesia

agdya@geodipa.co.id

Keywords: *Gender, Gender Mainstreaming, Social, Geothermal Development*

ABSTRACT

Indonesia ranks 116th out of 189 countries on the 2018 Gender Development Index (GDI). Nationally, female development still lags behind compared to men. From 2010, the development of men has a "high" status with a Human Development Index (HDI) above 70 while the development of women is still in the range of the 60s and has a "moderate" status. This is what causes Indonesia's GDI to still be below 100 over the period 2010-2017.

In Indonesia, the female position in many categories (representation, employment, etc.) is lower compared to that of men. The development of a geothermal project provides hope and opportunity for the communities in the project area, including female groups/villagers. In developing geothermal projects in Patuha (West Java) and Dieng (Central Java), Indonesia, PT Geo Dipa Energi conducted a gender assessment. Low participation of women in public consultations was found, as well as poor access to various job opportunities in geothermal projects.

In addition, based on available data, there are still gaps in employment opportunities between men and women in geothermal projects in both regions. One of the main causes is the local norms that lead women to carry multiple responsibilities in domestic and public spheres, thereby reducing the capacity of women to access various opportunities from the project.

This paper presents challenges and opportunities in mainstreaming gender at a geothermal project in Indonesia, in particular during the preparation period in which the gender assessment was being conducted. The series of public consultations and women's group discussions indicated that geothermal project development should consider the impact on women and other vulnerable groups. The project developer should clearly state the opportunities for female participation in project implementation, as part of the company's commitment towards improving the local socioeconomic standards.

1. GENDER EQUALITY IN INDONESIA'S GEOTHERMAL ENERGY SECTOR

Gender discrimination in various aspects of social life results in differences in achievement between men and women. In areas with a strong patriarchal culture, women are generally left behind men in the fields of health, education and the economy. This happens because the existing norms in patriarchal culture often harm women by placing them as "second class citizens". Therefore, gender mainstreaming should be included in various development planning documents, both at the national and global levels.

The issue of gender is one of the factors in the Sustainable Development Goals (SDGs). Gender is a multidimensional issue covering health, education and economics which are also the focus of the SDGs. Apart from being specifically included in the fifth goal, gender issues are also included in almost all of the goals in the SDGs.

Although geothermal energy is globally recognized as a clean and reliable source of heat and electric power, its development can inadvertently lead to adverse outcomes that disproportionately disadvantage women. Based on tried and tested practice, and lessons learned, this report introduces ways that geothermal projects can mitigate risks and pursue opportunities to address gender gaps within the project cycle. The authors outline the risks and opportunities associated with (i) changes in land use and natural resources, (ii) changes of employment and economic patterns, and (iii) changes of environment and health. Gender disparity and female participation in development has become a matter of global attention. Women's participation is perceived to play a critical role in efforts for poverty alleviation.

The Gender Empowerment Index (GEI) increases every year, but the gap between men and women in Indonesia remains. Moreover, due to the persistent social and gender inequalities in access to income distribution, natural resources, health and education opportunities, women and girls are more likely to remain in poverty.

One of the causes of the widening gap in expenditure per capita between men and women is the relatively low share of women in several business sectors with high productivity. Productive sectors such as (i) mining, (ii) electricity and gas (iii) information and communication and (iv) real estate, are dominated by male workers. In the mining sector, which is the third highest productivity sector, the percentage of female workers is below 10%. Women in Indonesia tend to work in the service sector, providing accommodation and trade with a level of productivity that is lower than the productive sectors.

Equal participation of both women and men is crucial to driving economic growth. One of the biggest challenges we are currently dealing with is to close the gender equality gap, especially in the mining and energy industries. In 2016, only 6.7% of employees working in the mining sector were female, while the rest were male (BPS Data, 2016).

There are two factors associated with the problem: (i) the lack of regulations to support women's participation, (ii) limited human resources that fit the company requirements. These situations occurred due to lack of awareness of gender equality at the corporate level. Multiple reasons had led to those factors, and they could be linked to social norms, differences in education levels, lack of access to general services, as well as cultural factors. It is believed that education plays an important role in strengthening the importance of gender equality in the mining & energy sector.

ISSN 2703-4275

This covers business leadership, management and recruitment processes and retention strategy (Gondim, 2019).

2. METHODOLOGY

This study applies qualitative research methods utilizing primary data from gender assessment in Dieng and Patuha, as well as secondary data and references. Qualitative methods can be particularly helpful in illuminating how men and women view their lives. The qualitative methods used consist of several common observational (both direct and participatory) and interview techniques, the latter including key informant, group interviews and focus group discussions. These techniques were used to understand men's and women's different types of knowledge about their environment and to elicit in-depth information on a single topic with key informants.

In the analysis of qualitative data, the informant responses are not "the truth" or not genuinely open but need to be assessed against other sources of data. There is a short discussion of how qualitative data has been used in comparative work, (Rubin, 2006).

3. GENDER ANALYSIS IN PT GEO DIPA ENERGI'S GEOTHERMAL FIELDS

While the energy sector can provide employment opportunities for women and men, it is currently dominated by men. Persistent gender inequality in secondary and higher education, as well as gender stereotypes in the labor market, contribute to restricting women's access to opportunities for technical and skills training. These, coupled with gender discrimination in hiring practices, severely restrict female participation in the energy sector and are constraints to the development of a skilled and empowered female workforce. (Asian Development Bank, 2019).

3.1 Gender Analysis in PT Geo Dipa Energi's Employment

PT Geo Dipa Energi recognizes the importance of ensuring equal opportunities for both women and men throughout the project cycle. With a gender approach, the geothermal project can contribute to national policy frameworks on promoting equal rights to men and women and avoid exacerbating or perpetuating gender inequality. To this end, the project seeks to incorporate gender-responsive design through improving corporate human resource standards for female participation in decision-making and hiring of female engineers and workers.

For this research, PT Geo Dipa Energi's geothermal fields under study are the Dieng and Patuha areas. Patuha is located in a mountainous area in the Ciwidey Sub-district, Bandung Regency, West Java Province. The area is quiet and isolated from residents. The Dieng plant is located in Central Java Province, spread out in 3 regencies, namely Banjarnegara, Wonosobo and Batang. Dieng is a tourist area that has several cultural and natural relics. Villagers live very near to the geothermal project sites; in many places, geothermal pipelines pass through residential areas. Some agricultural lands are very near and partly within the project areas.

Figure 1 shows the distribution of employees in PT Geo Dipa Energi's geothermal areas. The data shows that women are under-represented; out of 259 employees who work in Jakarta, Patuha and Dieng, only 15% are women.

Office Location	Female		Male		Total
	Σ	%	Σ	%	
Jakarta	23	29%	57	71%	80
Patuha	10	13%	68	87%	78
Dieng	5	5%	96	95%	101
Total	**38**	**15%**	**221**	**85%**	**259**

Figure 1: Female and Male Employees of PT Geo Dipa Energi.

The Labour Law Number 13 Year 2003 Article 5 states "Every person available for a job shall have the same opportunity to get a job without discrimination". This policy has not been fully applied at PT Geo Dipa Energi's geothermal power plants; the Operator positions are open only to men and is stated on the job application paperwork.

PT Geo Dipa Energi's view is that men and women bring different insights and ideas to the table, thus providing better problem-solving. Acknowledging that women are still underrepresented, PT Geo Dipa Energi is committed to attract and retain talented female employees, invest in more employee training and capacity building, and ensure that hiring, promotions, and reviews are fair. In addition to that, they strive to enhance their capacity through active participation in Women in Geothermal (WING).

3.2 Gender Analysis of the Local Communities of Dieng and Patuha

This gender analysis was conducted by reviewing relevant data and information obtained from PT Geo Dipa Energi. There are three villages near the Patuha geothermal plant namely:

(i) Sugih Mukti
(ii) Alam Endah
(iii) Panundaan

Six villages are near the Dieng geothermal plant, namely:

(i) Pranten
(ii) Kepakisan
(iv) Karang Tengah
(v) Dieng Kulon
(vi) Bakal
(vii) Sikunang

To complement data and information from PT Geo Dipa Energi and the village governments, nine public consultations were held and attended by 354 participants. The participants comprised of 271 (77%) men and 83 (23%) women who are representatives of potentially affected persons living close to the project area. These participants included village officials, CBO (PKK, Posyandu, Bumdes, elderly groups), and sub-district and district government agencies (social affairs, environment, and forestry).

The public consultations were carried out in 3 sessions namely:

(i) opening session in plenary format
(ii) break-out group session in the form of focus group discussion (FGD)
(iii) report back in plenary format.

During the break-out groups' session, separate consultations with women were conducted. Apart from the female focused group, there were two other groups: environmental and social safeguard. After each public consultation, several interviews were also conducted with key informants who included land renters/users, village heads, and community members (all of which were part of the 354 participants).

It should be noted here that due to logistical and time constraints, for the 9 public consultations in Patuha and Dieng, it was arranged for 2 public consultations to be conducted per day, i.e. 1 in the morning and 1 in the afternoon. This arrangement affected the number of women participating in the public consultations. Since women in Patuha and Dieng were generally busy with household chores in the morning, the public consultations conducted in the morning had less women present, compared to those participating in the afternoon. However, on Friday, since it is considered as day off in Dieng, there was an equal percentage of women participating in the morning and afternoon, as shown in the table below.

DATE & TIME	LOCATION	VILLAGE	FEMALE		MALE		TOTAL
			Σ	%	Σ	%	
18-Mar-19 Afternoon	Patuha	Sugih Mukti	12	20	49	80	61
19-Mar-19 Morning		Alam Endah	9	18	42	82	51
19-Mar-19 Afternoon		Panundaan	18	31	41	69	59
Subtotal in Patuha			**39**	**23**	**132**	**77**	**171**
21-Mar-19 Morning	Dieng	Praten	6	21	22	79	28
21-Mar-19 Afternoon		Kepakisan	10	50	10	50	20
22-Mar-19 Morning		Karang Tengah	10	26	28	74	38
22-Mar-19 Afternoon		Dieng Kulon	9	26	25	74	34
23-Mar-19 Morning		Bakal	3	7	38	93	41
23-Mar-19 Afternoon		Sikunang	6	27	16	73	22
Subtotal in Dieng			**44**	**24**	**139**	**76**	**183**
Total in Patuha + Dieng			**83**	**23**	**271**	**77**	**354**

Figure 2: Number of Participants in Public Consultations

Women comprise 50% of population in villages nearby Patuha geothermal plant, and 49% of the population near the Dieng geothermal plant, as shown in Figures 3 and 4.

Village	Female		Male		Total
	Σ	%	Σ	%	
Alamendah	11,174	50%	11,147	50%	22,321
Panundaan	6,322	50%	6,440	50%	17,752
Sugihmukti	6,174	48%	6,559	52%	12,733
Total	**23,670**	**50%**	**24,146**	**50%**	**47,816**

Figure 3: Populations of Villages Near the Patuha Geothermal Plant

Village	Female		Male		Total
	Σ	%	Σ	%	
Kepakisan	5,946	49%	6,308	51%	12,254
Dieng Kulon	1,731	48%	1,847	52%	3,578
Bakal	6,174	51%	1,670	49%	3,380
Sikunang	1,225	53%	1,100	47%	2,325
Praten	708	49%	725	51%	1,433
Total	**11,320**	**49%**	**11,650**	**51%**	**22,970**

Figure 4: Populations of Villages Near the Dieng Geothermal Plant

Results from the consultations regarding livelihood and income showed that the most common livelihood is agriculture (rice, carrots, potatoes and mushrooms). Other livelihoods are trading and civil servant. Both men and women may be self-employed or employed by an individual landowner, tea plantation or a government-owned forestry enterprise in Patuha. There is a different wage for female and male laborers. Female workers earn approximately IDR 30,000 per day (± USD 2) for working from morning to noon. While male workers earn IDR 50,000 per day (± USD 3.5/day) for working from morning to late afternoon.

Most villages in Dieng only have elementary schools, therefore, families have to send children to Wonosobo (one hour from Dieng) to pursue junior and high school. For this purpose, money is needed for transportation costs as well as living costs (accommodation and meals) if the children stay in Wonosobo. A female participant in the group discussion said she has to spend IDR 1,500,000 per month (± USD 105) for her child's expenses to stay in Dieng. Female villagers in Dieng admitted that they have to take on additional work, such as working longer hours in neighbourhood farms, to get extra income for their children's education. In other words, female villagers take on a larger burden of the family responsibilities.

With regard to the representation of women in decision-making positions, 2 out of 9 Village Heads in the project areas are female, and in most villages at least 30% of local BPD (*Badan Permusyawaratan Desa*/Village Council) are female. For instance, the Village Head in Sugih Mukti Village is female, and out of eight BPD members, three are female.

There are at least 3 female Community Based Organisations (CBO)'s in villages near to Patuha and Dieng. (i) a community-based organization for empowerment and family welfare that addresses issues on family health and education, (ii) a community-based integrated health services (*posyandu*) that addresses health for mothers and infant children, and (iii) Quran chanting/readings or a Moslem religious group. These CBO's have regular weekly or monthly meetings attended by their members. These meetings also serve as channels to disseminate information. PT Geo Dipa Energi can make use of these meetings for future dissemination of information, or consultation.

The participation of women in public consultation depends on many factors (IDB,2014):

a. Social norms
   Women cannot speak freely in public forums. They have to ask their spouse to convey their opinion.

ISSN 2703-4275

b. Level of education
The proportion of women is considerably lower than their male counterparts within the same community. This education gap can increase the marginalization of women from consultation.

c. Working hours
The household and farmer tasks assigned to men and women within the community may prevent women from attending consultations. For example, when a public consultation is scheduled at a time when women are caring for their children or preparing meals.

Access to participation in village consultation meetings is much lower for females. "Ordinary" female villagers said that they are usually not invited to village community meetings or consultations (*musrenbangdes*). Generally, only female members of the community-based organization for empowerment and family welfare are invited to these meetings or consultations. Ordinary female villagers are keen to participate in these meetings with the hope to obtain information and access to programs/activities (i.e. trainings, capital, technical assistance, etc.) that could improve their livelihood, as well as other information relevant to their daily lives such as environmental issues.

The convenient time for a consultation meeting for women in Patuha and Dieng is in the afternoon (after household chores are done), and preferably on Friday as it is their day-off (non-working day).

Female villagers addressed their needs with regard to improving their businesses. They need training on food processing to turn their agriculture commodity into quality snacks, packaging and marketing. Some of them would also like to be trained in sewing to become a seamstress, as they would like to make use of their sewing machines. In Dieng particularly, women would like to enhance their capacity in managing homestays, including online booking, networking with tour operators, and managing finance. Women also commented on their need for mentoring, as training is usually conducted for only 1 or 2 days which are not sufficient to build their capacity, mentoring would allow technical assistance to continue. In addition to that, capital to start or expand their business is also needed.

Female villagers hope to get information about job opportunities from PT Geo Dipa Energi. Some women are interested in job opportunities for unskilled positions, and some in skilled positions. Other women are not interested in working at PT Geo Dipa Energi, but they are keen to serve as vendors for PT Geo Dipa Energi, such as a catering or stationery supplier. They hope that job or partnership opportunities at PT Geo Dipa Energi are disseminated to female groups (Family Welfare Guidance, integrated services post in Indonesian women, The Quran reciting group). In addition to that, female villagers would like to have information about PT Geo Dipa Energi's Community Development program, especially the types of programs/activities that can be supported by PT Geo Dipa Energi, a timeline for proposal submissions, and the template / format for proposals. Reasoning for this, as the female villagers explained, is that PT Geo Dipa Energy usually disseminates information about job opportunities and the CSR program to the village office, and as such the information does not reach female villagers.

4. CONCLUSION AND RECOMMENDATION

Based on a number of primary and secondary data, it is concluded that there is a lack of awareness of gender equality issue in PT Geo Dipa Energi's geothermal fields. Therefore, the authors recommend a Gender Action Plan (GAP) as a strategy to increase gender awareness.

The GAP consists of a number of activities and targets to be performed in Dieng and Patuha geothermal field. The detail GAP can be found hereafter.

Gender Action Plan
Output 1: Geothermal power plants constructed and commissioned
1. Contractors employ local people, including women, in project activities a. At least 20% local people hired, including 20% local women 2. Gender-responsive Grievance Redress Committee (GRC) formed a. At least 10% membership of GRC are women
Output 2: Institutional capacity of PT Geo Dipa Energi strengthened
1. Social and gender awareness in the energy sector improved a. Sex-disaggregated and inclusive PT Geo Dipa Energi a Human Resource Development Plan, aligned with core labour standards and National gender commitments, developed and approved. b. PT Geo Dipa Energi give the opportunity to hire women c. Training on social and gender awareness projects and contract management practices for geothermal delivered to PT Geo Dipa Energi staff (400 staff training days with at least 30% training days allocated to women staff). (Baseline: 20%; Target: 30%) d. At least 10 GDE staff trained (of whom at least 20% women) in geoscience, reservoir, drilling and operations for geothermal 2. Gender-inclusive community centre environmental awareness in the energy sector improved a. At least one (1) gender-inclusive public consultation on environmental monitoring and management plans, including community health and safety, delivered per project site, each year
Output 3: Partnership and Community Development Program Enhanced
1. PT Geo Dipa Energi Gender-responsive Communication Strategy developed, approved and implemented at project sites a. Four (4) gender-responsive communication packages/activities including a video developed and delivered b. At least one (1) gender-responsive geothermal safety awareness and emergency preparedness consultation delivered per project site, each year (40% participation of women)

ISSN 2703-4275

2. PT Geo Dipa Energi Gender-responsive Community Development Strategy developed and tested at project sites a. At least four GDE staff (two (2) women and two (2) men) are trained in gender-responsive community facilitation. b. Gender-inclusive needs assessment of current community livelihood practices completed, and findings validated by community (sex disaggregated) c. 30% of PT Geo Dipa Energy a Community Development Program's budget allocated to female livelihood and scholarships d. Community Livelihood and Enhancement Program implemented including at minimum, support to: 30 women-operated carica processing micro-enterprises and 36 women-operated agro-processing micro enterprises e. Direct-use geothermal livelihoods strategy developed maximizing opportunities for women and youth, as part of a feasibility study and in anticipation of National regulatory reforms pertaining to direct-use guidelines for geothermal energy
Output 4: Project Management and Gender-specific Activities
1. Recruitment of Gender Specialist to support GAP implementation, monitoring and reporting. 2. Orientation and capacity building on GAP implementation and related requirements are conducted for the management and other key implementing partners. 3. Collection of sex-disaggregated and gender-specific data relevant to the Gender Action Plan is integrated in the overall project performance and monitoring system.

The GAP includes the following actions and targets: (i) labor opportunities, and ensuring equal employment opportunities, equal pay for work of equal value and protection of female workers from discrimination and other forms of harassment; (ii) participation of women in capacity building activities; (iii) gender sensitive communication materials including positive images of women in geothermal; (iv) at least 30% participation of women in public consultation and community development activities.

ACKNOWLEDGEMENTS

We thank Asian Development Bank especially for Gender Specialists for the discussion and consultation of the data reviewed here.

REFERENCES

Asian Development Bank: *Gender tool kit: Energy*. Philippines. (2012)

Asian Development Bank: *Gender Analysis. Proposed Load and Administration of Technical Assistant Grant.* Indonesia (2019)

Asian Development Bank: Project administration manual. PT Geo Dipa Energi: Geothermal Power Generation Project (Guaranteed by the Republic of Indonesia. (2019)

Gondim, Tatiza (2019). *Outlook of Women in Mining and Energy in Indonesia by Maya Muchlis from WiME*. Coaltrans Events. https://www.coaltrans.com/insights/article/outlook-of-women-in-mining-and-energy-in-indonesia).

Inter-American Development Bank: *Gender and Renewable Energy: Wind, Solar, Geothermal and Hydroelectric Energy*. Gender and Diversity Division, Social Sector. (2014

Rubin, Deborah: Qualitative methods for gender research in agricultural development. I*nternational Food Policy Research Institute*, (2006)

The World Bank: *Gender equality in the geothermal energy sector*. International Bank for Reconstruction and Development. Washinton DS. (2019)

The Ministry of Women Empowerment and Child Ptotection of Republic Indonesia: *Human Development Based Gender Report*. Indonesia (2019)