MINING COMPANIES' SOCIAL DEVELOPMENT AND MANAGEMENT PROGRAM (SDMP) AND ITS IMPACT TO THE MULTI-SECTOR OF CARCANMADCARLAN

Odinah L. Cuartero[†]

Cantilan Pilot School, Cantilan I District, Linintian, Cantilan, Surigao Del Sur, Philippines

Dulcemina O. Leva

St. Paul University – Surigao Campus, Surigao City, Philippines

ABSTRACT

This study presents the findings from assessing the extent of implementation of Social Development and Management Program (SDMP) by the mining companies and their impact to the multi-sector group in CarCanMadCarLan (CCMCL). This study employed the descriptive research design where quantitative data gathered through a questionnaire was substantiated with qualitative data gathered through interviews. The participants chosen were representatives from the different social, economic, health, education, and environment sectors. Data were analyzed using frequency count and percentage distribution, mean and standard deviation, t-test, analysis of variance and Tukey's HSD Test. The findings demonstrated that among the five multi-sectoral groups, Education Sector received the highest mean while Environment Sector obtained the least in the assessment of SDMP implementation and its perceived impact. The study concludes that mining operations in CarCanMadCarLan leave positive and negative impacts. This can be attributed to the extent of implementation of SDMP, which cannot be considered as par excellent.

© 2014 AESS Publications. All Rights Reserved.

Keywords: Mining industries, Local communities, Multi-sectoral group, Multi-sectoral impact, SDMP, CCMCL.

Contribution/ Originality

The study is one of very few studies which have investigated Mining's SDMP and its impact to the multi-sectoral group. This contributes significant benefits of responsible mining and the risks of irresponsible mining. The study also provides realization among multi-sector in finding solutions to the negative issues brought by mining.

1. INTRODUCTION

Mining has improved considerably over the past decades in adopting new technologies and in considering the environmental, economic, social, health and cultural impact of mining operations. However, in this country (Philippines), mining still has to demonstrate what "responsible" mining is. Additionally, there is skepticism to overcome because, unfortunately, the mining industry has shown a poor record of performance on the issue in the past 50 years (ASoG Ateneo School of Government, 2011). Some leading mining activities in the Philippines are mostly located in Mindanao, specifically in the part of Surigao Del Sur where both small and large scale mining industries have been operating. CarCanMadCarLan (CCMCL), which refers to the five municipalities in Surigao Del Sur: Carrascal, Cantilan, Madrid, Carmen and Lanuza, have been engaged in mining operations. A good number of residents of the mentioned municipalities, however, remain firm with their belief that mining is a threat to the communities (Mascarinas, 2012). (MGB and Hubo, 2003): Working through its community, the mining industry should show full-hearted support and social responsibility to gain sentiments within and in neighboring communities. Obtaining positive information may, in turn, help protect and maintain the operations through Social Development Management Program (SDMP). When people, including the multi-sectoral groups of the community, receive direct benefits for local education, infrastructure and health care, they are much more likely to accept and support mining activities. (Buxton, 2012): In response to the growing demand of society, companies which proclaim to be environmentally aware and corporately responsible have formulated environmental policies into their mission statements and strategic plan. However, the difficulty lies in the implementation. How should these policies be applied within the range of activities undertaken by organizations? (Rawls, 1999): Companies can only claim to be socially responsible if their direct, indirect, and cumulative impact on society benefits the most vulnerable and worst off groups. In the Philippines, the Department of Environment and Natural Resources (DENR) Administrative Order No. 2000-99 indicated the rules and regulations on the implementation of SDMP for mining projects. "Social Development and Management Program (SDMP)" refers to the comprehensive five-year plan of contractor authorized to conduct actual mining and milling operations. The goal is sustained improvement in the living standards of the host and neighboring communities by creating responsible, self-reliant and resource-based communities. The desire is to have communities capable of developing, implementing and managing community development programs, projects and activities in a manner consistent with the principle of people empowerment. Section 136-A of Philippine Mining Act of 1995 states that SDMP shall be in consultation and in partnership with the host and neighboring communities SDMP shall also cover all of the contractor's plans, projects, and activities towards the development of the host and neighboring communities (Section 5) in accordance with the credited activities (Section 4) (Retrieved from (Philippine Mining Act, 1995). For mining companies, SDMP is the manifestation of a move towards greater sustainability in which companies can frame their attitudes, strategies, and relationships with stakeholders and communities within a popular and acceptable concept (Jenkins, 2008).

Mining, Minerals and Sustainable Development (MMSD, 2002) stated that a number of multinational mining corporations have rapidly expanded their operations into rural areas of the

developing world. (Warhurst and Insor, 1996) This can be compared with the recent global survey on Canadian Province of Alberta where it ranked first in the country and third worldwide as the most attractive jurisdiction for mining investors and productive approach to mining policy. The province offers competitive taxation regimes, sound legal systems and relatively low uncertainty around land claims.

With reference to the multi-sectoral impact of mining, there are no systematic studies to track the impact of the mining industries (as a whole or at a project level) to improving the lives of local communities. It is important to measure the impact on the multi-sector of the communities especially after mining activities end. Companies that are regarded as socially responsible are more likely to gain respectability and increase their business with governments that are accountable to their citizens. These companies are also more efficient when recruiting as their reputation gives them access to the brightest and best in the labor market (Humphreys, 2000). Social issues are a top priority owing to inherent poverty, particularly in rural communities that are more likely to experience disruption of their life styles through mineral development, and in locations where inhabitants see mining operations as an opportunity for alleviating this status (Mtegha, 2013). Mining Policy Framework (2010) further suggested that achievement of occupational health and safety is also a company responsibility that, when successfully pursued, leads to a more productive, profitable and stable operation. Similar to education but perhaps even more immediate in terms of sustainable development and returns to the community, mines developed in provincial or frontier areas – the most common pattern are in a position to make significant differences to the availability and quality of health services. Moreover, the development of education as part of Mining SDMP could assist students to develop more grounded understanding of the difference between responsible mining and illegal mining. The above related studies has significant bearing to the present investigation in as much as they discuss the extent of implementation of SDMP and the adverse impact of mining companies on the multi-sectors of the community. The initiatives to promote and support responsible mining industries through their Social Development and Management Program (SDMP) are also a topic of concern in both the present study and those reviewed and cited. Furthermore, the cited studies are the present researcher's source of data with the various findings and conclusions as the basis in the preparation of the instrument used for the present study. Basically, the differences between the reviewed literature and the present study are the locale in which they were conducted; the participants and variables involved, the manner in which the data were treated, and the circumstances prevailing during the conduct of the study.

In this study, both the profile of the mining industry and the multi-sector groups in CarCanMadCarLan were considered as relevant variables. The profile of mining companies include mining site/location, number of employees, number of years in operation, size of operation and identified activities of social development management program (SMDP) projects. The profile of the multi-sectoral participants considered the following relevant variables: age, sex, educational background and occupation. The study also answered the following: The perceived extent of implementation of SDMP among the Mining Companies in CarCanMadCarLan on the components of Social, Economic, Health, Education and Environment; The significant difference in the extent of implementation of SDMP with respect

to the profile of the mining companies and the profile of the participants; The perceived impact of the Mining Companies in CarCanMadCarLan to the following sectors: Social, Economic, Health, Education, and Environment; The significant difference in the participants' perceptions regarding the impact of mining companies when they are grouped according to sector.

2. METHODOLOGY

2.1. Participants and Procedure

The participants of the study were representatives of the multi-sectoral groups who were deliberately chosen based on the following criteria: number of years as a resident in the place where the mining industries are located and as a non-employee of the mining industries. Central Limit Theory (CLT), which provides for a minimum of 30 participants, was employed to get the actual sample. From the thirty (30) representatives of the five sectors in every community, five (5) participants from each sector answered the structured questionnaire and one (1) senior leader was considered for the interview. Choice of senior leader participants was based on the following criteria: forty-five (45) and above years of age and have resided in the locality for at least twenty (20) years. They were interviewed to gather more candid information/opinion about the mining industry in the locality. Below is the summary of the participants' profile in multi-sector

Social Sector Participants. Most of the participants are in the age 45 to 49 years old (8 or 32%). The majority are male (13 or 52%) and have attained bachelor's degree (17 or 68%). The typical occupations among the participants are barangay officials (8 or 32%) and farmers (6 or 24%). It can be said that the social sector participants are mature in age, properly educated and have varied occupations in the society.

Health Sector Participants. The ages of the participants range from 40 to 44 (8 or 32%). The majority are female (13 or 52%) with an educational background of bachelor's degree (19 or 76%). The typical occupations of participants are Entrepreneur (5 or 20%), Merchant (5 or 20%) and Treasurer (4 or 16%).

Economic Sector Participants. Most of the participants (12 or 48%) have ages between 35 and 39, are female (16 or 64%) and have an educational background of bachelor's degree (21 or 84%). Common among the participants is having an occupation as either a Clinic Assistant (8 or 32%) or a Nurse (5 or 20%). Three physicians and one medical technologist are included in this study.

Education Sector Participants. The participants' (10 or 40%) common age ranges from 40 to 45. Quite a number of participants are female (23 or 92%) with an educational background of Bachelor's Degree (15 or 60%). The common occupation among the Education Sector participants is teacher (9 or 36%).

Environment Sector Participants. The participants have ages ranging from 45 to 49 (10 or 40%) and 55 and above (10 or 40%). The majority are female (13 or 52%) with an educational background of High School (15 or 60%). Since most of the participants in the Environment Sector have only finished High School, most of them have no stable means of living and no occupation. However, a variety of participants including Environmentalist (5 or 20%), Native

Dweller (5 or 20%), Farmers (5 or 20%), Indigenous People (5 or 20%) and Fishermen (5 or 20%) were also purposely chosen for this particular sector.

After the formal approval from the participants, the researcher personally administered the questionnaires to the participants and retrieved them after these were accomplished. To gather more information, interviews were conducted to the senior leaders of each multi-sector from the identified areas where the mining company is located. An interview guide was used to elicit the participant's personal observations with regards to the mining industry.

2.2. Instrument

The study made use of a researcher-made questionnaire as the main tool for research. Two kinds of questionnaires were used. One questionnaire, which is intended for the mining industry contains two parts. Part I entails the company's profile including the mining site/location, total number of employees, number of years in operation, and the size of its operation. Part II elicits information on the identified activities of Social Development Management Program (SDMP) projects of the industry in a checklist form. The mining companies had to check the identified activities which they already implemented and disregard the ones that have not been carried out. The second kind of questionnaire is focused on the participant's profile. Part I includes the participant's age, sex, educational background and occupation. Part II asks for the industry's extent of implementation of Social Development Management Program (SDMP) where the participants have to describe the extent of implementation of SDMP according to sector using the scale of 1(Very Low) to 4(Very High). Sample of items are: "Conducts organizational meetings among social sectors to make residents be aware of the positive and negative effects of the mining projects (Social); shows transparency in financial reporting among its linkages (Economic); conducts monthly/quarterly medical missions to serve the needs of the communities (Health); constructs school buildings within the mine site that can accommodate an average enrollees (Education); and conserves environmental resources through environmental protection projects (Environment). Part III elicits information on the degree of impact of mining industry to the multi-sector in CarCanMadCarLan. The participants had to indicate the degree of impact of mining company using a scale of 1(No Impact) to 4 (High Impact). Sample of items are: "Multi-sectoral expectations are clearly communicated through direct and immediate actions taken in any transactions (Social); supports community members to establish small and medium-sized enterprises (Economic); Improved and Maintained the well-being of the community and employees (Health); investing in education projects, skills development programs, apprenticeships and support for further education for local people (Education); and continually seeks to reduce the environmental footprint of the operations and related activities (Environment).

Data were analyzed using frequency count and percentage distribution, mean and standard deviation, t-test, analysis of variance and Tukey's HSD Test. These tools were used to measure the difference among the five sectoral groups with regards to the extent of implementation of the SDMP, with respect to the profile of mining companies and participants; and the difference among groups' perceptions on the impact of mining industry when they were grouped according

to their profile. Stan (2014) stated that ANOVA and Tukey's HSD Test determine the variation between groups to the variation within groups.

3. RESULTS AND DISCUSSION

3.1. Extent of Implementation of SDMP by the Mining Companies in CarCanMadCarLan

Table 1 reflects the summary on the extent of implementation of SDMP by mining companies in CarCanMadCarLan. The Grand Mean assessment in the extent of implementation of SDMP of the mining companies in CarCanMadCarLan is 2.80 with a standard deviation of 0.82. Four of the five components of SDMP received a Qualitative Description rating of *High* indicating agreement of the extensiveness of program implementation in the five mining companies. These include Education (3.16), followed by Health (2.80), Economic (2.69), then Social (2.58). The Environment received the lowest mean of 2.46 indicating that this program component of SDMP was not extensively implemented. This may be attributed to mining industry's goal of developing a better relation with the community. Since education is the frontward partner of the community, it becomes the top priority of mining industries which may involve a concealed program to win the interest of the community. Infrastructures such as multi-purpose learning center, computers, books, teacher's incentives and other trainings for both educators and learners are given priorities by the mining industries. Wise and Shtylla (2007), mentioned in their study that it is worth noting that the construction of school and clinic by the mining industries in the communities have direct positive impact on the educational performance of the learners. In the Abompuniso community not only has mining industries built a school to educate children of the rural households for better human capital, but also the mining company pays 15% of teachers' salary. There is also the institution of a scholarship scheme for wards of poor families as support for higher education.

Table-1. Summary on the Extent of implementation of SDMP by mining companies in CarCanMadCarLan on the Multi- Sector

Sector	Mean	SD	Verbal Interpretation	Qualitative Description
Social	2.58	0.98	Agree	High
Economic	2.69	1.04	Agree	High
Health	2.80	1.04	Agree	High
Education	3.16	0.16	Agree	High
Environment	2.46	0.90	Disagree	Low
Grand	2.80	0.82	Agree	High

3.2. Difference in the Extent of Implementation of the SDMP with Respect to the Profile of the Mining Companies and the Profile of the Participants

Table 2 displays the ANOVA results on the extent of implementation of SDMP of the mining companies operating in CarCanMadCarLan when they are grouped according to their company profile. As observed in Table 2, the column on Source of Variation has an exemption on variables included in mining company profile which is *the identified activities of SDMP by mining companies*. The identified activities of SDMP by the five mining companies vary in its contributory factors which are dependent to the host community and location. This means that in

framing company's SDMP, one should consider the credited activities approved by MGB Director after the mining exploration phase is completed; these depend on the situation and needs of the host and neighboring communities. Thus, the variable on the identified activities of SDMP by the mining company is not necessarily measured on its extent of implementation with respect to the company profile since it would only result to insignificant findings.

The results reveal that there is significance in the extent of implementation of SDMP among these mining companies when the grouping is based on location (p value = 0.0001) and number of years in operation (p value = 0.0130). However, there is no significant difference in the implementation of SDMP in terms of number of employees (p-value = 0.0580) and size of operation (p-value = 0.3980).

Table-2. Analysis of Variance on the Extent of Implementation of SDMP of the Mining Companies with Respect to the Company Profile

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F_{com}	$P\text{-}Value$	Decision
Location	2488.320	1	2488.320	68.061	0.0001[*]	Ho is rejected
No. of Employees	134.670	2	134.670	3.684	0.0580	Ho is accepted
Years in Operation	487.480	2	121.870	3.333	0.0130[*]	Ho is rejected
Size of Operation	149.780	1	37.445	1.024	0.3980	Ho is accepted

Legend:[*] - significant at 0.05

As to the location, those mining companies which are in the safe zone have higher extent of SDMP implementation compared to those in the danger zone. Safe Zone areas are valuable when intact, and their value would be jeopardized by extractive industries (Dudley and Stolton, 2002). If the potentially affected communities reject a project on one of these categories of lands, the area would be off-limits to mining. Mining corporations that follow all international environmental agreements, strive to achieve best practices, and avoid No-Go Zones would become industry leaders (Bauer, 2009). Meaningfully informed, with free prior consent as a precondition for licensing, mining operations should ensure these categories are excluded.

In terms of number of years in operation those companies operating for more than five years are compared to those operating lesser than five years. The implementation of SDMP among mining companies is difficult to attain during the first-five years of their operation, this is because they intervene with the time constraint. As compared to the mining industry which has been operating for more than five years, their identified activities based on SDMP will more likely succeed due to long time duration and quality preparation. Strongman (2001) said that in a mining company with long-established services, the provision and impacts are more feasible than otherwise. Within a long period of years inhabiting the mining areas, mining company can expose the community to both positive and negative impact, where mining can contribute, through higher incomes, to better nutrition, education and health. The number of years inhabiting the area for mining presents both opportunities and risks to local residents, governments and the environment through how they manage the long duration of time to effectively implement the sustainable development and management program of mining.

As to the company profile in terms of the number of employees (p value = 0.0580) and size of operation as large scale or small scale (p value = 0.3980), no significant difference in the extent of SDMP implementation is observed among these company based on the p values that are higher than 0.05 level. Thus, it can be said that whether the mining company has bigger or smaller number of employees and that whether they operate in large scale or in small scale, their commitment to implement the SDMP do not vary significantly. ASoG Ateneo School of Government (2011) opined that the policy criteria for categorizing small versus large-scale mining do not always match the criteria for determining the scale of environment impacts or economic benefits. But in some instances, small-scale mining operation produces more negative effects in the community.

Table-3. Tukey's HSD Test for the Extent of Implementation of SDMP by Mining Company in CarCanMadCarLan in the multi-sectoral community.

(I) Sector	(J) Sector	Mean Difference (I-J)	Std. Error	Sig.	95% Interval Lower Bound	Confidence Upper Bound
Education	Social	12.00*	3.959	0.024	1.04	22.96
	Environment	10.80	3.959	0.056	-0.16	21.76
	Health	5.00	3.959	0.714	-5.96	15.96
	Economics	9.28	3.959	0.138	-1.68	20.24
Social	Education	-12.00*	3.959	0.024	-22.96	-1.04
	Environment	-1.20	3.959	0.998	-12.16	9.76
	Health	-7.00	3.959	0.397	-17.96	3.96
	Economics	-2.72	3.959	0.959	-13.68	8.24

* the mean difference is significant at the .05 level.

Comparing the mean assessment of the five sectors in *Tukey's HSD Test* (See Table 3), only in Education and Social Sectors revealed a mean difference of 12.00 which is interpreted as significant. Granting that both the Education and Social Sectors belong in one category as they agree on the extensiveness of the SDMP implementation, they quietly differ on the average mean interval where Education received the highest ($\underline{M}$ = 3.16) and Social Sector gained the lowest ($\underline{M}$ = 2.58) among the four sectors which agreed. It can be considered henceforth that Social Sector conceal unfavorable responses on the extent of implementation of SDMP which completely resulted to agreement. This also indicates that there are still issues on the implementation of SDMP by the mining company with respect to the multi-sectoral community.

Tables 4 to 6 present the test of significant difference in the participants' perceptions on the extent of implementation of SDMP by the mining companies in CarCanMadCarLan areas when they are grouped according to their profile such as age, sex and highest educational background.

As shown in Table 4, the p-value obtained with age as the source of variation is 0.1460 which is greater than 0.05. Thus, the null hypothesis in this regard is accepted. Therefore, there is no significant difference in the perception of the participants regarding extent of SDMP implementation when they are grouped according to their age. It appears that whether the participants are younger or older, their assessment about the SDMP implementation of the mining companies is the same. This means that ages of the participants are not operant factors causing variations in the participants' perception about the phenomenon being investigated.

Freiberger (2013) *in his study said that age*, has no significant relation when it comes to decision making. The issue about age signifies that the present trend in age discrimination is deteriorating. This means that young and old are the same, younger people can follow the same decision made by older people. Though, young people literally still lack the experiences the older people had experienced, they can be reliable when it comes to ideas and knowledge. Contrary to the idea of Acedo (2007) which he believed that age is a significant factor in decision making. One interpretation of these findings could be that individuals lacking in knowledge and experience in certain decision areas, as occurs in the majority of youths, tend to place little value on the factors that affect the decision and are not aware of the decision's complexity. In contrast, adults and retired persons study these factors more closely and judge the quality of their decisions after undertaking the appropriate strategies.

Table-4. Participants' Perception on the Impact of Mining Industry in CarCanMadCarLan Areas when they are grouped according to Age

Age	Mean	SD	SD Error Mean	F	p-value	Decision
45 and Below	2.8	0.9332	0.097			
Above 45	2.9	0.8427	0.147	2.142	0.1460	H_o is accepted
Grand Mean	2.8	0.9096				

Statistical test: Independent T-Test

Result: Not Significant difference at 0.05

Table-5. Participants' Perception on the Impact of Mining Industry in CarCanMadCarLan Areas when they are grouped according to Sex

Sex	Mean	SD	SD Error Mean	F	p-value	Decision
Male	2.7	0.9394	0.136			
Female	2.8	0.8945	0.102	1.217	0.2720	H_o is accepted
Grand Mean	2.8	0.9096				

Statistical test: Independent T-Test

Result: Not Significant difference at 0.05

Table 5 shows, the P-value of 0.2720 is greater than 0.05, which means that the null hypothesis is accepted. The general perception was consistent between male (2.7) and female (2.8) which only proved that the perceptions of participants when grouped according to sex has no significant difference on the extent of implementation of SDMP by the mining companies. Both participants regardless of its sex rated "high" on the impact of mining. Based on 2002 Earth Summit, gender equity is an essential building block in sustainable development. Indeed, none of the pillars of sustainable development can be achieved without finding solution to the problem of gender inequity. However, certain study of Strongman (2001), indirect negative health impacts from mining tend to affect women in particular—due to their responsibilities, within the extended families, of caring for children and the sick, elderly or disabled. Finally, higher incomes and the increased availability of alcohol, as well as the migratory context may increase the potential for violence against women. Henceforth, the study of Conway (2013) relate to the present study in a point that mining is gender neutral where both male and female

cannot hardly be compared as to their perceptions on mining and the way they receive the benefits from it.

Table-6. Participants' Perception on the Impact of Mining Industry in CarCanMadCarLan Areas when they are grouped according to Educational Background

Educational Background	Mean	SD	SD Error Mean	F	p-value (2-tailed)	Decision
Elementary, High School, Vocational	2.3	0.9311	0.165	123	0.0001	H$_o$ is rejected
Bachelors, Masters	3.0	0.8459	0.088	49.755		
Grand Total	2.8	0.9096				

Statistical test: Independent T-Test

Result: Significant difference at 0.05

Table 6 reveals that participants with elementary, secondary and vocational courses rated "low" as compared to the participants with Bachelor's degree and Master's Degree who rated "High" the SDMP program implementation. This difference of perception with respect to highest educational attainment is found to be significant looking at the p-value of 0.0001. This means that participants who are well-educated are more likely to agree that mining companies in CarCanMadCarLan have implemented the program than those participants who have just attained the basic and post-secondary course. Comparatively speaking, it is worth noting that participants who have finished bachelors and master's degree obtain higher benefits than the benefit received by ordinary or non-working participants. Possibly the reason is that people who earned highest degree of education are in the high rank position in any workplaces, in some way, they disregard whatever are the communal fluctuations in the community because they are not directly affected with the change. This is conflicting to the part of those who have low family income and poor educational background; they fear the possibility of losing their means of living without any choice of replacement. It is unfair for those who have tried exerting considerable efforts for a living and soon will be wasted by the effect of mining. Over-all, the five groups of participants perceived that the mining companies in CarCanMadCarLan have only a Moderate Impact to the multi-sector groups based on the Over-all Mean of 2.68 with a standard deviation of 0.087. As presented in Table 7, the Education Sector (3.06) posted the highest degree of impact, followed by Health (2.81), then the Economic Sector (2.59). It is on these three sectors that the mining companies create positive impact. The sectors of Environment (2.49) and Social (2.46) having received the lowest means registered a negative impact from the operation of these mining companies. Based on the interview from the senior leaders of the multi-sector, mining contributes both positive and negative impact. The educational leaders consistently expressed positive perceptions about the impact of mining particularly on Education. One stakeholder said that mining gives opportunities to the school community. Many contributions were extended by mining companies to teachers and learners, particularly towards their learning development and experiences. In addition, mining contributes positive impact to the Economic and Health Sectors. Additional positive information from the senior leaders stated that mining has made wonderful contributions to their barangay. The SDMP addresses the needs of the people. There has been a huge economic progress both in

economy and health services. Whatever projects and activities they have agreed upon in the barangay have been successfully implemented because of the support given by the mining company. However, more negative impacts were perceived from the interviewed senior leaders, disappointments were expressed by leaders in the Environment and Social sectors especially about the degradation of natural resources and environment. Most environment and social leaders expressed nothing good but all negative effects brought by the mining industries. According to the leaders, there is no enough evidence that MGB and LGU collaborated on the geohazard maps and the ways in managing hazards to the host communities. Most of the political leaders pay lip service only when in front of the public. There was no firm decision and stand from the local government officials since MGB showed no support and considerations from it. In this situation, the townsfolk are the ones searching for the possible moves to prevent the most vulnerable and at risk community because of mining.

Table-7. Summary of the Perceived Impact of Mining Companies in CarCanMadCarLan

Sector	Mean	SD	Verbal Interpretation	Qualitative Description
	2.46	0.086	Disagree	Low Impact
Social Economic	2.59	0.093	Agree	Moderate Impact
Health Education.	2.81	0.049	Agree	Moderate Impact
Environment	3.06	0.163	Agree	Moderate Impact
	2.49	0.094	Disagree	Low Impact
Over-all	2.68	0.087	Agree	Moderate Impact

This means to say that the existence of mining companies in CarCanMadCarLan did not help improve environmental and social development, lest these mining activities only hamper progress and development in these sectors.

3.3. Difference in the Participants' Perceptions Regarding the Impact of Mining Companies in CarCanMadCarLanwhen they are Grouped According to Sector.

Based on Table 8 with the p-value of 0.0180 obtained from the test of difference comparing the mean assessment of five sectors namely social, economic, health, education, and environment, there is sufficient ground to reject the null hypothesis. Thus, there is a significant difference in the perceptions of the five sector participants regarding the impact of mining companies in CarCanMadCarLan.

Table-8. Difference in the Participants' Perceived Impact of Mining Companies in CarCanMadCarLan with Respect to the Sectoral Grouping

Multi-Sectoral Groups	Sum of square	df	Mean square of	F	P-value	Decision
Between Groups	2419.328	4				
Within Groups	23508.720	120	604.832	3.087	0.0180	Ho is rejected
Total	25928.048	124	195.906			

The mean difference is significant at the .05 level

Table-9. Tukey'sHSD Test on the Impact of Mining Company in CarCanMadCarLan in the multi-sectoral community.

(I) Sector	(J) Sector	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Education	Social	5.80*	1.710	0.008	1.06	10.54
	Environment	6.56*	1.710	0.002	1.82	11.30
	Health	3.56	1.710	0.235	-1.18	8.30
	Economics	4.68	1.710	0.055	-.06	9.42
Social	Education	-5.80*	1.710	0.008	-10.54	-1.06
	Environment	.76	1.710	0.992	-3.98	5.50
	Health	-2.24	1.710	0.686	-6.98	2.50
	Economics	-1.12	1.710	0.965	-5.86	3.62
Environment	Education	-6.56*	1.710	0.002	-11.30	-1.82
	Social	-.76	1.710	0.992	-5.50	3.98
	Health	-3.00	1.710	0.406	-7.74	1.74
	Economics	-1.88	1.710	0.807	-6.62	2.86

(Based on observed means) * the mean difference is significant at the .05 level.

Based on the *Tukey's HSD Test* (See Table 9)on the impact of mining company, there are three identified sectors which differ significantly on their understanding about the impact of mining company. The sectors include Education, Social and Environment. Numerically speaking, Education with the mean difference of 5.80 to Social Sector and Environment Sector (-6.56), perceived to have a great impact of mining company which expressed outlying comparison among the two sectors. Hence, on the previous discussion, Education posted the highest degree of impact while Social and Environment obtained the lowest degree of mining impact. Those in the education, economic and health sectors viewed mining industries as positive factors towards achieving progress and development in CarCanMadCarLan while those in the social and environmental believed that mining companies' operation in this part of the country is detrimental to environmental and social development. It is evident therefore that people in CarCanMadCarLan do not have one understanding and acceptability of the mining operations in the locality. With the plurality of their understanding, the finding implies the need for further investigation to dig deeper into the implications of the phenomenon being investigated. Although the four other sectors responded "extensive" on the extent of implementation of mining industry's SDMP, the Social Sector offered the least response. This implies that Social Sector is not contented with the implemented activities of mining industry based on its SDMP for the reason that very little in the way of obvious benefits have been translated into the local communities. However, according to Otto (2006), the move to sustainable development has ensured that through local community involvement and appropriate governance structures, that the benefits of extraction are more equitably shared. In short, the social issues are closest to the hearts and minds of local communities because, with the right administrative structures, tangible benefits could be accessed by them within the immediate future. Social issues touch the general well-being and upliftment of citizens of a country and Governments, through the responsible ministries, are therefore under more pressure to deliver on this theme than others. Analyzing deeply the result, it shows that the main positive impact of mining companies is the generation of employment opportunities for local folks which

consequently benefit the education sector because parents can now afford to send their children to school, however, negative impact of mining activities can be observed in the environmental destruction and degradation and social concerns. The study also noted the multi-sector group has varied perceptions about the impact of mining activities.   The education, health and economic sectors have positive outlook about mining while those in the social and environmental sectors are apprehensive about mining.   Although it was found out earlier that mining companies contributed much in the improvement of the education sector, this study also noted some meaningful oppositions even from this sector citing some negative impact of these mining activities to the society as whole.

4. CONCLUSION

Mining is an activity that needs to be properly planned with all probable impacts anticipated, identified, evaluated, and mitigation measures planned because it is a short-term activities with long-term effect (Abdus-Saleque, 2008). Thus, mining industry should design best practices to contribute to its sustainable management and development program (SDMP) and improve its image in terms of mine safety, social impact, economic imbalance, environmental restoration, and community relation. Premised by the findings, the following conclusions are made:

1. The five mining companies operating in CarCanMadCarLan are located in safe zone where mining activities have no conflict with the surrounding communities. Most of the mining companies in CarCanMadCarLan are large scale and have been in operation for a short period yet. They provide employment to hundreds of local folks.

2. The multi-sector groups are convinced that the five mining companies operating in CarCanMadCarLan have sufficiently complied with SDMP requirements by supporting mostly the educational programs and activities in Education Aspect. However, several identified activities of SDMP were not implemented by these mining companies particularly in Health and Economic Aspects. Nevertheless, mining companies failed to implement most of the identified activities of SDMP on Environment and Social Aspects.

3. The safe locations of mining companies and the number of years of operations are operant factors significantly contributing to the extensiveness of program implementation of SDMP.

4. The highest educational attainment of the multi-sector participants is an operant factor causing significant variation in the assessment as to the extensiveness of SDMP implementation by the mining companies in CarCanMadCarLan.

5. The operation of mining companies in CarCanMadCarLan leaves positive and negative impact. The positive impact is observed in employment generation which consequently benefits the education sectors. With job opportunities, support to the education programs and activities the children have more access to quality education. The negative impact is noted in the aspect of environmental degradation such as dust pollution, water siltation, and the destruction of the physical environment and the lack of social development.

6. Considering all the data gathered and after thorough analysis of findings, the study finally concludes that the mining operations in CarCanMadCarLan have more negative impact

to the multi-sector groups. Therefore, the mining industries would be challenged in extending policies and practices to include all the multi-sectorial groups and community as part of their CSR and SDMP. However, the greatest challenge lies on how national and local government officials forego efforts in establishing, monitoring and implementing socio-environmental ordinances and concerns to improve and develop full assurance of positive outcomes of whatever mining related projects and activities are ongoing.

5. RECOMMENDATIONS

Based on the conclusions, the following recommendations are offered:

Mining companies should strengthen SDMP implementation giving more emphasis in the social and environmental programs and activities. An independent multi-sector committee should be organized to serve as mining watch. The DENR should invite international experts to assess the environmental status of affected mining communities in the operation of mining companies in CarCanMadCarLan. Awareness campaign on responsible mining should be strengthened so that the multi-sector community in the operation of mining companies in CarCanMadCarLan will fully understand the provisions of responsible mining and become more vigilant about the mining activities.

REFERENCES

Abdus-Saleque, K., 2008. Social and environmental impacts of mining-Australian lessons on mitigation. Website. Available from http://phulbariproject.wordpress.com [Accessed 6 May 2014].

Acedo, M.L.S., 2007. Factors that affect decision making, gender and age. International Journal of Psychology and Psychological Theraphy, Arizona State University West, USA, 7(3): 381-391.

ASoG Ateneo School of Government, 2011. Mining policy: Is there a future of mining in the Philippines. The Graduate School of Leadership and Public Sevice: 1-2.16. Available from http://bantaykita.ph/pdfs/ASOGMining%20Policy%20Briefpdf.

Bauer, F., 2009. Practical experiences with the use of air-decks in quarry blasting. 35th Annual Conference on Explosive and Blasting Techniques. ISEE- International Society of Explosives Engineers. Denver, 2: 359-373.

Buxton, A., 2012. MMSD+10: Reflecting on a decade of mining and sustainable development. Discussion Paper 2012, International Institute for Environment and Development. Available from: pubs.iied.org/pdfs/16041IIED.pdf.

Conway, 2013. Gender equality benefits mining sector. Website. Available from https://www.wgea.gov.au/latest-news/gender-equality-benefits-mining-sector.

Dudley, N. and S. Stolton, 2002. To dig or not todig? Criteria for determining the sustainability or acceptability of mineral exploration, Extraction and transport from ecological and social perspectives. A discussion paper for WWF. Gland, Switzerland: WWF International. Available from: http://www.wwf.org.uk. [Accessed June 10th, 2008].

Freiberger, P., 2013. Opinion: Age discrimination in the workplace has become a prominent concern. Times of trenton guest opinion column on June 09, 2013 at 6:06 AM. Available from http://www.nj.com/times-opinion/index.ssf/2013/06/opinion_age_discrimination_in.html.

Humphreys, D., 2000. A business perspective on community relations in mining. Resources Policy, 26(3): 127–131.

Jenkins, H., 2008. Corporate social responsibility (CSR) in the mining industry- The risk of community dependency. Queen's University Belfast: 2. Available from http://www.crrconference.org.

Mascarinas, E., 2012. Rallies against and for mining held in Surigao. The online portal news of TV5. InterAksyon.com. April 29, 2012; 9:11AM. Available from http://www.interaksyon.com/article/30559/rallies-against-and-for-mining-held-in-surigao.

MGB and C.L. Hubo, 2003. Profiles of the corporate social responsibility (CSR) practices of Philippine mining firms. Mines and geosciences bureau (Philippines). Philippines: University of Asia and the Pacific, pp: 1. Available from: siteresources.worldbank.org/INTPSD/.../phil_CSR_Case_Studies.pdf.

Mining Policy Framework, 2010. The intergovernmental forum on mining, minerals, metals and sustainable development. Available from http://www.globaldialogue.info/MiningPolicy/Framework/final.pdf.

MMSD, 2002. Breaking new ground: Mining, minerals, and sustainable development. World Business Council for Sustainable Development.

Mtegha, H., 2013. An assessment of Ghana's mineral policy in the Era of sustainable development: A critical review of mineral royalties disbursements for communities. Occasional Paper. Centre for Social Responsibility in Mining (CSRM). The University of Queensland, Brisbane, Australia. pp: 16-17.

Otto, 2006. Mining royalties: A global study of their impact on investors, government, and civil society,of 2. Data and Research, 2. Available from http://econ.worldbank.org/external/default/main?

Philippine Mining Act, 1995. Highlights of the mining act of 1995 (RA 7942) and its revised Implementing rules and regulations. Available from http://www.mgb10.com/policies.

Rawls, J., 1999. A theory of justice (Revised Edition). Boston: Harvard University Press.

Stan, B., 2014. Comparing more than two Means: One-way ANOVA. Website: www.tc3.edu.

Strongman, J., 2001. Mining and poverty reduction. Industry overview of mining, draft for comments. Macroeconomic and Social Approaches, 25: 446.

Warhurst, A. and R. Insor, 1996. Environmental issues for developing countries arising from liberalised trade in the mining industry. Natural Resource Forum, 20(1): 27-35.

Wise, H. and S. Shtylla, 2007. The role of the private sector in expanding economic opportunity through collaborative action. An International Business Leadership Forum. Economic University Series, John Kennedy School of Government, Harvard University. pp: 6-9. Available from: www.2.tribanco.com.br/Imprensa/Sumariofinaldoforum.pdf.