

# Social and Environmental Impact Assessment of Guru Gobind Singh Refinery Bathinda – A Case Study of Village Kanakwal

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**Abstract** - The paper is related with the social and environmental effect of Guru Gobind Singh oil refinery Bathinda (Punjab) on its location. This case study of village Bathinda basically shows an assessment of social and environments impacts as well as economical impacts. All the data required for this study collected through both primary and secondary sources. The natives of the village were interviewed and a group discussions with them were used to collect some more data. In this interview schedule, group discussions and observation methods both male and female respondents, of different ages, gave their opinion regarding to the refinery. The main objective /purpose of the study was to know the negative and positive impact/effect of human life and wildlife projects, so that effective measures can be taken. The paper also shows the most affected citizens and some suggestions for the future scope of the refinery.

**Key Words:** Social and Environmental impact assessment, human life, environmental impacts

## 1. INTRODUCTION

Whenever a development takes place, human life and wildlife are directly or indirectly affected for whom their development plan is made. These effects can be negative or positive. By studying these impacts properly enhancement in the development projects can be made so that negative effects of newly evolving development can be removed prior to initiation.

According to Brundtland report, "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs". We can understand the type of impacts a development project would have on the environment and residents of that particular area of location through the Social-Environment impact assessment. It also helps us to know the future scope of the evolving project before it is started. As we know refineries are considered to be a major source of pollution and evacuation of residents from their land, such Social-Environment Assessment has become mandatory. According to the Council for Social Development, it is very important to know what sort impacts any development project is bearing on society by gathering information. Through this impact assessment possible bad effects can be eliminated and good effects be upgraded. Basically such types of assessment for planned processes provides blueprints for driving a social change. "Social-Environmental Assessment involves the process of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, and projects) and social and environment change processes invoked by those interventions. Its primary purpose is to bring a more sustainable and equitable and biophysical and human environment. It is the process of identifying the future consequences of current proposed action".

Guru Gobind Singh Refinery is a refinery owned by HPCL - MITTAL ENERGY LTD. It is a joint venture between HPCL & L.N. MITTAL. Its location is in village Kanakwal, Bhatinda (Punjab). This project is the largest investment with US \$5 billion in Punjab. It refines 225,000 barrels crude every day and has scalable capacity up to 18MMTPA. The Government of Punjab and surrounding population have high hopes with this project. The local people of the village gave their lands for this project wishing that they would get employment out of it.

After the success of this refinery, which increased the rate of industrialization in Punjab. It became mandatory to do an assessment of social and environmental impact to understand what effects society is bearing.

## 2. METHOD AND MATERIAL

The required data was collected from all possible sources. Different web based sources are used for information regarding the Geographical area and total population of the villages, prime knowledge of social environment assessments was collected from

related books and previous studies of such assessment and basic information of Guru Gobind Singh Refinery was gathered from websites.

The study was conducted in two phases:

1. Firstly, all the important persons like doctors, patwaris, and school teachers, anganwadi workers (early childhood care and education centres workers) were interviewed.
2. In the second phase, 190 residents of the village kanakwal gave interviews and attended group discussions, arranged to collect data from both female and male respondents of different age groups.

### 3. RESULT AND DISCUSSION

In 1996-1997 Guru Gobind Singh Oil refinery was established in bathinda district, for project lots of land was required therefore the direction was made to take four villages namely Raman, Ramsarn, Fullokhari, Kanakwal/rattangarh. After a year ago, in 1998 the process completed.

**TABLE-1:** The detail of land acquired for the project

Name Of The Village	Total Land Of The Village (in acres )	The Total Land Acquired (in acres)	Agricultural Land Out Of The Total Land Acquired (in acres)	Number Of The Land Owners Of Acquired Land
Raman	5,687	10.4	10.4	10
Ramsarn	1,424	405	405	360
Fullokhari	2,947	288	50	280
Kanakwal/Rattangarh	2,937	1,288	0	690
Total	12,995	1,991.4	465.4	1340

**Source:** Patwarkhana, Rama Mandi village, Bathinda, Punjab.

Mostly the land of village was acquired from Mundra (Gujrat) to Guru Gobind Singh Oil Refinery a pipeline was placed. According to the right to way the management committee of the Guru Gobind Singh oil refinery paid for the acquired land for pipelines as per law.

#### 3.1. Different Impacts of Guru Gobind Singh Oil Refinery

The establishment of the refinery not only affected a single aspect of an individual's life but also gave birth to impacts on the environment, social, economic and political life of people.

##### 3.1.1. Environmental Impacts

The establishment of the refinery harming the environment of the village. The refinery has its sulphur plant on the side of village Kanakwal because of which emission of foul smell gases takes place all the time and causes many issues for the village natives.

Health problems are also a major problem for villagers due to the pollution from the refinery. Senior citizens, pregnant women and newborn babies have faced more health issues than others. Women are suffering problems like conceiving and many of them reported about their miscarriages whereas new born babies are suffering from skin diseases, eye diseases and allergy. Old people have asthma, blood pressure, eye problems, skin diseases, palpitation and nocturnal sleepness. 30% of the total population of village diseases is caused by refineries. According to a local doctor their diseases are increasing because of the increasing pollution from the refinery and has become a threat to human existence.

The refinery pollution is also adversely affecting the crop producing. The yield is reducing. As per a news report in Punjabi Tribune Malwa edition, "the flame from the oil refinery mars the wheat crops". The cotton crops are getting black because of the ash coming from its chimneys. The yield as well as crop price is reducing here.

Pollution from the refinery also affected the trees. During the research an observation showed that the trees in villages also come in the fold of pollution. The trees have webs on them. The neem tree that is believed to be bitter also had webs on it. The village people said that the impact is more adverse on old trees. They are withering.

The pollution from the refinery not only affected human health but affected animal health also. Emerging problems of conceiving and miscarriage is noticed in animals as well as milk from them has reduced. Therefore, animals are also the victim of the refinery's pollution.

### **3.1.2. Social impacts**

Social impacts of the refinery are also serious. The establishment of the refinery largely affected the social life of citizens of the village. People are facing many issues with health as well as living.

The habitants of the acquired land had to migrate from their land because of the establishment of the refinery. Therefore, they have to leave their village and demand rehabilitation of their village from the government.

After habitation their relationship has redefined. People of other villages do not want to marry their sons and daughters and even acquaintances do not like to stay in the villages as they do not want to get affected by the pollution from the village because of the establishment the unity among people is vanishing. The entire village is divided into two groups. One group is favouring the refinery unit and the other is against. The group which supports the establishment claims that there is no problem because of the refinery.

They believe that the refinery has positively influence the education of villagers. Many students are studying or want to study engineering so they can get a job in the refinery. Due to downfall in their primary occupation, which is agriculture, it has become necessary for them to get job after completing their education. The education rate in villages is increasing now as they want to get engaged in the tertiary sector. They invested money in education which they gain by selling their land to the refinery.

The laborers who shifted to the village during the construction of the refinery have now permanently stayed in the village. So people have rented their homes to them. These people have influenced the villagers' relationship and fraternity also. The case of thefts in the village seems to be arise after the arrival of immigrants.

People who sold their land got a lot of money but only some of them used that money wisely whereas some used that money in alcohol, gambling and drugs. Hence, this has increased the rate of drug supply in the village.

### **3.1.3. Economic impacts**

After talking about economic impacts with villagers it has noted that their main occupation was agriculture which has reduced because their land was acquired for the project. A few villagers got work in the refinery. Some other villagers bought lands in other places from the money they got which shows improvement in their economic conditions. The people who did not use their money wisely and the labour class got affected negatively.

Villagers have demanded for relocation of their entire village to the government and got no answer from them yet. So they boycotted the election for the panchayat, that's why the village does not have any panchayat. The village is divided into two groups. One is demanding for relocation whereas the second one is against it. They say that the purpose of establishing such a project gives rise to the development of the country.

These projects increase the economy of the country by enhancing the process to export to other countries that give trade and bring more foreign exchange in the country. But the question arises here is that now these projects can be made more beneficial and demerits of projects for public life be minimised? Where projects must be established that people's lives go through very few problems.

But when project establishment takes place these things do not considered and given less weightage. Which is why people leaving nearby location face many issues. As it has been observed in this case study that people have to face social, economical

and environmental problems because of the huge project. Guru Gobind Singh refinery conducts medical camps keeping health benefits of local people. Stationery items and schools uniform were given to students who were studying in government school. A water filter for clean water and a fridge for cool drinking water were installed by refinery management committee. A training centre in order to train village girls and women was opened but some villager's do not accept the facilities provided by the refinery.

From the foreign results and discussion, it can be concluded that the government should take some steps to make it obligatory that an impact assessment studying both advantages and disadvantages are done prior to establishing development projects. It should be seen that kind of influences a project would bear socially, economically and environmentally. While making development policies they should keep in mind that those policies should be framed and implemented in such a way that localities don't have to face the problems which the Kanakwal people are facing. After this case study and observing it properly, it can be said that the refinery has become a threat to lives of people around the situation and requires honest interventions to repair the damage.

#### 4. SUGGESTIONS

Based on this case study and lines faced by local people of the villages a few suggestions are extended for the accountable authorities due to Guru Gobind Singh Oil Refinery:

- [1] The villagers of Kanakwal, where the oil refinery is situated, should be relocated at some other place so that people can get relief from their respective problems.
- [2] A control method should be implemented to reduce the emission of gases and foul smell.
- [3] Ecosystems along with flora and fauna should be taken care of properly.
- [4] Surroundings trees and plants should be looked after by the refinery authorities as much as trees are possible.
- [5] A veterinary hospital with proper maintenance should be made for human and domestic as well as stray animals. So the health of these poor speechless living beings also taken care of.
- [6] A proper training should be given to farmers on how they can secure their crops and animals from bad effects of the pollution.
- [7] Refinery can fund research focusing on ecological and changes in human and animals.

#### REFERENCES

- [1] Ahluwalia, Isher Judge Chaudari, Saumitra, Sidhu, Samrat, 2007-08. Punjab Industrial Review- United Nations Industrial Development Organization [Internet] [Available at: [www.unido.org/Fileadmin/user-media/Publication/Pub-free/Punjab-Industrial-Review.Pdf](http://www.unido.org/Fileadmin/user-media/Publication/Pub-free/Punjab-Industrial-Review.Pdf)]
- [2] Ajay Modi. Bathinda Refinery, A Project of HPCL – Mittal Energy Joint Venture, Stars Operations, 2012.
- [3] Akpofure EA, Ojile M. Social Impact Assessment: An Interactive and Participatory Approach [internet][Available at <http://www.unep.ch/etu/publications/29%20211%20to%20222.pdf>] [Retrieved on. 12.12.2014]
- [4] Barrow CJ. Environment and Social Impact Assessment: An Introduction. London: Arnold, 1997.
- [5] Becker HA, Vanclay F (eds.). The International Handbook of Social Impact Assessment: Conceptual and Methodological Advances. Edward Elgar Publishing. Cheltenham, Colchester. U.K., 2003.
- [6] Burdge, Rabel J, Vanclay F. Social Impact Assessment; A Contribution to the State of the Art Series. Impact Assessment and Project Appraisal. USA: IAIA, 1995.
- [7] Barrow CJ. Social Impact Assessment: An Introduction, A Member of the Hodder Headline Group London Co-published in the United States of America by Oxford University Press Inc., New York, 2000.
- [8] Canter, Larry W. Environmental Impact Assessment. ~ 109 ~ Journal of Pharmacognosy and Phytochemistry USA: CRC Press LLC, 1999
- [9] Center for Good Governance. Social and Environmental Assessment (SEA) Report. Andhra Pradesh Municipal Development Project. Hyderabad: Municipal Administration and Urban Development Department, Government of Andhra Pradesh, 2009. [Internet][Available at [www.apmdp.gov.in/docs/sear1.pdf](http://www.apmdp.gov.in/docs/sear1.pdf)] [Retrieved on 6.12.2014]
- [10] Council for Social Development. Social Impact Assessment; Report of a Research Project on Social Impact Assessment of R&R Policies and Packages in India. New Delhi: Council for Social Development, 2010. [Internet] [Available at [dolr.nic.in/Social-Impact-Assessment%20hmm-2011.doc](http://dolr.nic.in/Social-Impact-Assessment%20hmm-2011.doc)] [Retrieved on 29.10.2014]