



Cost and Benefit Analysis of Pollution Control In Raisin District

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Abstract

The importance of environment in our daily life is well known. Environment consists of an inseparable whole system constituted by physical, chemical, biological, social and cultural elements which are interlinked individually and collectively in myriad ways. It adversely affects not only human lives but also to the coming generation. The environment has mainly two important components. First is physical and second is socio-economic component. The environment has much impact on the human health and activities. So many hazardous activity to the environment which affects the human beings air, water, land, climatic condition, ecology, aesthetic etc. Hence, this activity if properly designed by applying various environmental techniques and following the legislation can reduce this danger up to a great extent. However, this involves time as well as money. The cost benefit analysis is a basic tool to understand the industrial pollution and environment phenomenon, it provide suitable development and stability in term of economy in. The cost benefit analysis is widely used in many technological fields. The present paper mainly deals with the methodology of cost benefit analysis which is dependent on industrial pollution.

Keywords

Cost and benefits, industrial pollution control

Introduction

Industries contributes to significantly towards growth rate of any country. However, Industries require huge resource, both financial & technical. There is globalization, privatization and any company venture into the area only if it is clear about the cost and benefit of the project.

the society had to compulsorily bear the cost of various degradation and pollution, directly or indirectly. Direct costs are those which the society bears on its own account and the indirect costs are those which the society pays through various taxes, etc. The cost of the environment is ultimately borne by consumers through increase prices or taxes. Yet failure to prevent environmental contamination could cost people even more

Although most of the industrial and developmental activities are supposed to have built in pollution control and meditative measures. environmental contamination could cost people even more in health, physical, and environmental damage.

In recent years, there has been a remarkable growth of interest in environmental issues in sustainability and the management of development in harmony with the environment. Associated with this growth of interest has been the introduction of National and International Legislations. All the above consideration require a comprehensive and rigorous, cost benefit analysis of decision of whether to under taken an actively or not.

Objectives of The study---

To Study about the Cost Benefit analysis of industrial pollution control in raisin district in m. p.

Methodology---

This is descriptive research paper based on primary and secondary data. Data Was collected by pollution control board, EPCO, Industries and interview method.

Environmental activity

The environment can be structured in several ways- include components, scale, space and time. A narrow definition of environmental component would focus primarily on all media susceptible to pollution, including air, water, soil; flora and fauna, and human being; landscape, urban and rural conservation and the built heritage.

The Nature of Impact

The environmental impact of aarea are changes in environmental parameters in space and time, compared with its status prior to Industries. All the relevant parameter like: air quality, noise levels, local unemployment, crime, degradation etc has to be assessed prior to in feasibilityreport .

INFRASTRUCTURE FOR INDUSTRIAL DEVELOPMENT inRaisen

Infrastructure development is the basic need of the industrial development of any Region/Country The present Raisen district covers seven development blocks/seven Tehsils. District to keep up the balanced development on sector and region government has developed three industrial Estate at Begumgani and one industrial Growth centre at Mandideep in GoherganjTensile. By and large availability of land is not a problem for the industrial development in the district.

Factory Accommodation:

District Raisen is Industrial backward and most of the industrial units established are concentrated in Mandideep Industrial Growth Centre in Obyadullahganjblock, There fore other development blocks such as GairatganjBegumganj. Udaipura and silvani remain "No Industry Blocks" in the district. Now it is an immediate necessary to decentralize the industrial development. Detail of availability of industrial areas its current status is given below:

Table –1

Industrial Areas(Area in acres)

| S.No | Name of the Industrial Area | Total Area | Plots (Vacant in Nos) Allotted | Plots | Remark |
|------|------------------------------------|------------|--------------------------------|-------|--------------------------------------|
| 01. | Salamatpura | 30.57 | 05 | 02 | Vacant sites are illegally occupied |
| 02. | Pipalkheria | 75.00 | 07 | 32 | The whole area is occupied illegally |
| 03. | Gairatganj | 09.57 | -- | -- | |
| 04. | Semi-urban indl. Estate Beguamganj | 04.35 | 08 | 08 | |
| 05. | Indl. Growth Centre, Mandideep | 650 (app) | | | |

The above table clearly depicts that the people illegally occupy the industrial areas in Slammatpura and Gairatgani. This is a hindrance for the industrial development of the area. Government should take necessary action to vacate illegal occupation and should be allotted to interested entrepreneurs to set up industrial units.

In Mandideep Industrial Growth centre is developed by the AKVN. About 350 units of different types established in the centre. It is clearly proved that the small scale units has become vulnerable in the changes taken place in the national economy and many of the units closed down their activities or become sick in this centre.

AKVN is developing one more industrial centre is Satlaspur near Mandideep. The centre covers about 600 Acre land. It is proposed to accommodated only Large and Medium scale units in this centre. The sheds are yet to be allotted.

Water Availability for Industrial Purpose:

Water is one of the inevitable factors for the development of the industries. Raisen district is not having stable water source. The rivers flowing in the district are not perennial in nature. However other source such as ground water and reserves are serving purpose. At present there is no water scarcity in the district.

Power:

Madhya Pradesh electricity Board widely spread over their service in the district. Generally, power in Madhya Pradesh is not well. The same condition prevails in the district also. The following table shows the electricity consumption pattern in the district.

Table--2

Category wise consumption of power in the district.(In thousand kilowatt)

| Particulars | Household | Commercial | Industrial | Irrigation | Water Supply | Street light |
|-------------|-----------|------------|------------|------------|--------------|--------------|
| 'unit' | 48507 | 6120 | 156921 | 203073 | 3412 | 1160 |
| Percentage | 11.57 | 1.46 | 37.43 | 48.44 | 0.81 | 0.27 |

About one lakh electricity consumers are reported from the district. After Agricultural Industrial sector is the major consumer of electricity which is due to Mandideep industrial area.

Incentives:-----

Small Scale Industries are playing a vital role in the national economy. On seeing the importance, Union and State Governments providing many incentives for the SSI sector. Raisen district falls under the "A" category of industrially Backward District.

Central Incentives:

In the line of globalisation and liberalisation of the economy, Government of India has announced its industrial Policy in 1991. According to the Industrial Policy,

State Incentive:

The district is get all Incentives provided by the Government of Madhya Pradesh to industrial backward "A" category district. Out of seven existing development blocks five blocks come under "No Industry Block" as there is no Large/Medium scale unite is established in these blocks.

According to the Industrial Policy 1994, the incentives applicable to the "A" category of industrially backward districts in Madhya Pradesh.

Present Industrial Structure:-----

General Industrial Climate:-----

Raisen is an agro based district about 70 % of the population engaged in agricultural & allied activities. Industrial development in the district is yet to reach the optimum level. Industrial units are concentrated only in Mandideep Industrial Growth Centre of Obeydullaganj block. Decentralisation of industrial growth is yet advantage of transportation, as these towns are located in National High way no. 12. The district is having fundamental infrastructure facilities for industrial development. The entrepreneurs are more conservative in rural areas.

Large/Medium scale Industries:-----

The district achieved a significant industrial growth Mandideep Industrial Growth Centre, availing the comparative advantage of transport facility, Capital city in the vicinity etc., But the other parts/blocks of the district could not make headway in the field of industrial growth. Tireless efforts taken by the Union and State government, the industrial environment has become favourable in the district. There are Large/Medium scale units have been established in the district. All the unit are established under private sector.

The following list reflects the position of large/medium scale units registered in the district.

Table No. 3**Large & Medium Scale units registered in the District.**

| S. No. | Name of the Unit | Investment Rs. in lakh) | Employment | Status |
|--------|---|-------------------------|------------|------------|
| 1 | M/s United PolyPropolin Ltd | 138.28 | 109 | Working |
| 2 | M/s Oswal agro protein | 2.60 | 115 | NonWorking |
| 3 | M/s Oswal Agro mills | 8.77.00 | 305 | NonWorking |
| 4 | M/s ESD Printing House Pvt. Ltd., | 104.00 | NA | NonWorking |
| 5 | M/s Eastern Electrochemical | 45.00 | 148 | Working |
| 6 | M/s United Watches Ltd., | 236.76 | 09 | NonWorking |
| 7 | M/s WesternHalvarschidt forging., | 364.00 | 159 | Working |
| 8 | M/s Insulators & Electrical Co., | 34442.00 | 410 | Working |
| 9 | M/s M.P. Unipegnatic Ltd., | 314.00 | NA | NonWorking |
| 10 | M/s Godrej Foods Ltd., | 534.12 | 105 | Working |
| 11 | M/s Borar Electronics | 170.87 | 135 | NonWorking |
| 12 | M/s Ralson Industries Ltd., | 188.14 | 58 | Working |
| 13 | M/s National Information Technology Ltd., | 55.82 | 63 | Working |
| 14 | M/s Premier Bross P. Ltd., | 137.55 | 52 | NonWorking |
| □ M15 | M/s united Diamond Ltd., | -- | -- | NonWorking |
| □ M16 | M/s SourabhMetliPvt Ltd., | 300.00 | 33 | Working |
| □ M17 | M/s Lupin Lab Ltd., | 326.09 | 50 | Working |
| 18 | M/s Uniscan and Sonics Ltd., | 50.24 | 111 | NonWorking |
| 19 | M/s Colombia Electronics P. Ltd, | 4789.49 | 105 | NonWorking |
| 20 | M/s Venkatesh beverages Ltd., | 644.64 | 64 | Working |
| 21 | M/s Reliable Food Industries Pvt Ltd., | 644.64 | 27 | Working |
| 22 | M/s Kausa Leather Board Ltd., | 759.91 | 85 | NonWorking |
| 23 | M/s United Soya Ltd., | 359.68 | 106 | Working |
| 24 | M/s Armar Chemicals Ltd | 669.90 | 91 | Working |
| 25 | M/s P & C India Ltd., | 422.94 | 408 | NonWorking |
| 26 | M/s Lupin Lab Ltd., | -- | -- | Working |
| 27 | M/s SaiCarprit P. Ltd., | 350.02 | 60 | BIER |
| 28 | M/s badrish Paper mill & board | 210.18 | 70 | Working |
| 29 | M/S Anand Spinning Mills | 12.45 | -- | Working |
| 30 | M/s United electronics Ltd., | 2553.27 | 192 | Working |
| 31 | M/s CharuPolyplast Ltd., | 348.31 | 118 | Working |
| 32 | M/s Nagar Spining Mills Ltd., | 245.67 | 45 | Working |
| 33 | M/s Progreessive extraction & exporters | 864.68 | -- | NonWorking |
| 34 | M/s Bharat Zinc Ltd., | 162.16 | 46 | BFIR |
| 35 | M/s Innovative Parturition Technologies | 2892.84 | 327 | Working |
| 36 | M/s Standard Surfactants Ltd., | 54.96 | 35 | NonWorking |

| | | | | |
|----|--|---------|------|---------|
| 37 | M/s Crompton Greaves Ltd., | 85.44 | 90 | Working |
| 38 | M/s Prabhakar Paper Mills Pvt. Ltd., | 8428.59 | 1202 | Working |
| 39 | M/s Crompton Greaves Ltd., (Transformers Division) | 484.19 | 110 | Working |
| 40 | M/s Bhaskar Industries Ltd., | 795.10 | 115 | BIFR |
| 41 | M/s FijitsuOptel Ltd., | 181.36 | 167 | -- |
| 42 | M/s IFB Industries Ltd., | 943.61 | 46 | Working |
| 43 | M/s SMV Brevaril Ltd., | 874.99 | 98 | Working |
| 44 | M/s Aptel Telecommunication | 119.02 | 65 | Working |
| 45 | M/s Nagar Spinning Mills U-II | 4291.39 | 175 | Working |
| 46 | M/s Sam Distilleries & Beverages Ltd., | 1188.29 | 238 | Working |
| 47 | M/s Eicher Tractors | 971.25 | 76 | Working |
| 48 | M/s C.G. Alin Power System | 516.39 | 47 | Working |
| 49 | M/s Bhaskar Industries U-II | 551.28 | 26 | Working |
| 50 | M/s Kunstap Polymers Ltd-II | 2292.53 | 35 | Working |
| 51 | M/s Surya Oils (Solvent Plant) | 4302.69 | 485 | Working |
| 52 | M/s Surya Oils (Refinery Plant) | 1426.13 | -- | Working |
| 53 | M/s Surya Oils (Fast Food lant) | 2344.70 | 180 | Working |
| 54 | M/s Surya Oils (Soya Flour Mill) | 2795.02 | 75 | Working |
| 55 | M/s UnichemFertilisers (Source: DTIC, Raisen&Mandideep) | 2796.40 | 75 | Working |

All the Large/Medium Scale units are concentrated in Mandideep only. Other industrial Potential Block such as Udaipura, Badi, Silvani, Giratganj and Begumganj are remaining no industry block in the district. Decentralisation and balanced industrial development in the immediate necessary of the district.

The district has achieved headway in the industrial development due to the Mandideep Industrial Growth centre. Due consideration should be given for the development of other areas in the district also.

RESOURCE BASED INDUSTRIES-----

Agro based Industries

Mineral Based Industries:

Live Stock based Industries:

Fisheries:

Forest based Industries:

Wooden furniture, Door/Window frame:

Apple Culture:

Honey Processing Plant:

Demand Based Industries:

i) Bakery Industry:

ii) Paper Shopping Bag

iii) Cold Storage:

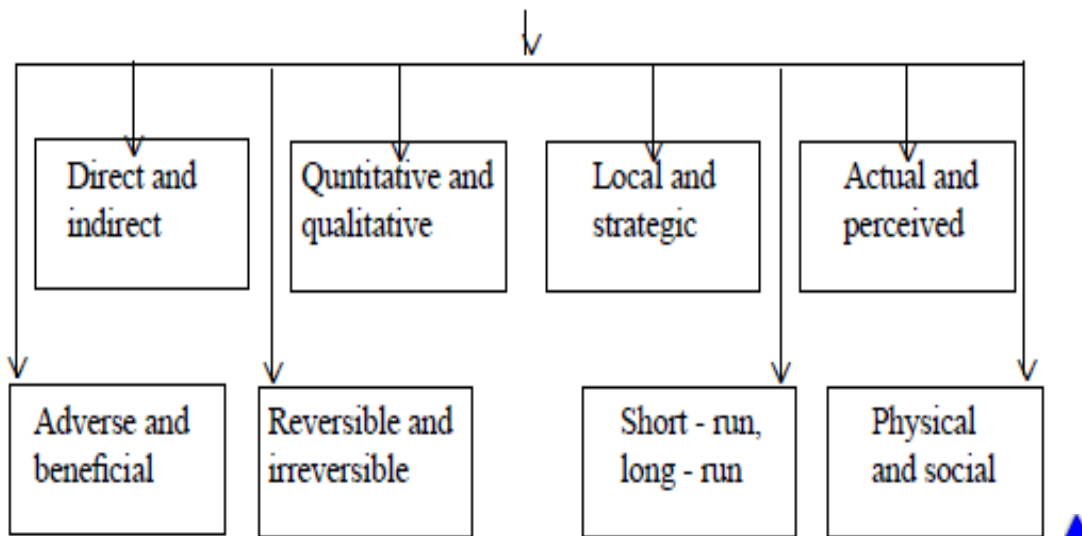
Textile Products including Hosiery:

Chemical Products:

Surgical Cotton Bandage:

Mechanical Products:

Types of impacts



Physical mine environment

| | |
|-------------------------------|--|
| Air and atmosphere | Air Quality |
| Water resource & water bodies | Water quality and quantity |
| Soil and Geology | Classification, risk, evolution |
| Flora and fauna | Birds, mammals, fish, etc, Aquatic and terrestrial Vegetation, bio-diversity |
| Human being | Physical and mental health status & well being |
| Landscape | Characteristics and quality of Morphological Changes |
| Cultural heritage | Conservation, rain fall, wind, heat flow etc. |
| Climate | Temperature, rain fall, wind, heat flow etc. |
| Energy | Light, noise, vibration etc. |

Social- economic environment

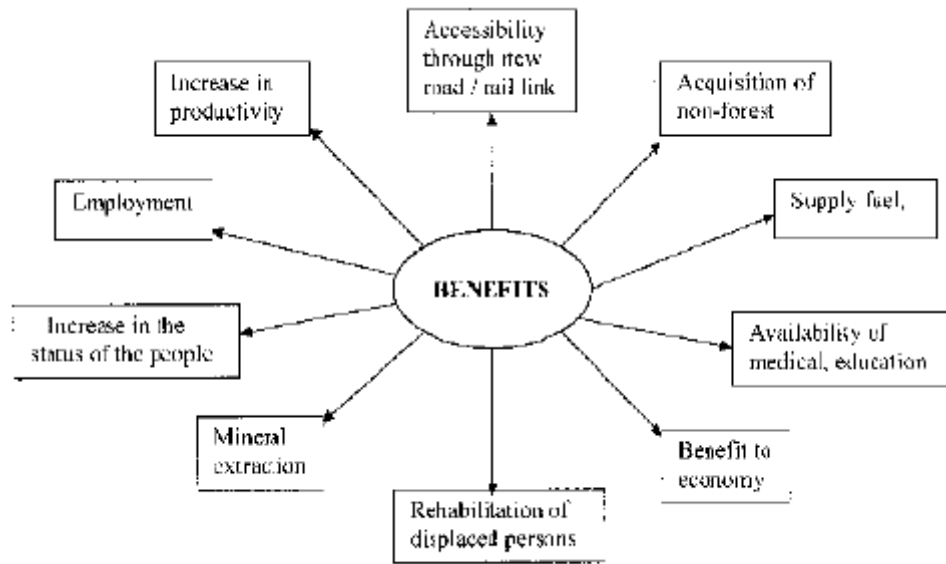
| | |
|-------------------------------|---|
| Economic base-direct | Direct employment; labor market character; local/ Non local trends |
| Economic base-indirect | Non-basic/services employment; labor supply and Demand. |
| Demography | Population and structure trends |
| Housing | Supply and demand |
| Local services | Supply and demand of services; health, education, Police etc. |
| Socio-cultural | Lifestyles/ quality of life; social problem, Community stress and conflict, etc. |

Cost benefit analysis (CBA)

It is essential to have a cost benefit impact analysis of a project. It lies in a range of project and plan appraisal methods that seek to apply monetary value to cost and benefits. It is more compressive in scope. It takes long view of the project (further as well as nearer future) and a wide view (in the sense of allowing for side effect). It is the comparison of any positive or negative changes in the value of mine environment amenities with costs (or benefits) of implementing the proposed change.

In other sense, it goes further and includes the task of the decision. In some case the costs-benefits analysis may regard some alternative even though he or she is not the decision taker, because his/her ability to predict that the decision taker himself would cause rejection. Cost benefit analysis can be done in two stages. First prior to mining,

the project would be analysed based on through cost and benefit and later post mining, to analyse the cost of environmental control.



Benefits of CBA

General Application of Costs-Benefits Analysis

1. In disease control program,
2. In a larger health care system,
3. In evaluating alternative planning policy,
4. In optimum allocation of resource to R & D project,
5. In water resource planning,
6. In transportation,
7. In airport location,
8. In calculation of environmental impact of a proposed Industrial activity.

Cost - benefit analysis typically involves reducing an innumerable of complex physical and social-economic variable to simple, quantifiable categories of costs and benefits. Calculate the value in current monetary term of future cost and benefits. Benefits are commonly defined by a person's willingness to pay for profit outputs. Costs are often defined, as the monetary expenditure required for using resource in one manner rather than another.

Future annual flows of cost and benefits are usually discounted to a net present value in a range of interest rate may be used to show the sensitivity of the analysis to change. If the net social benefit minus cost is positive than there may be presumption in favour of a project

The presentation of result should distinguish between tangible and intangible cost and benefits, as relevant, allowing the decision-maker to consider the trade - off involve in the choice of one option or the other.

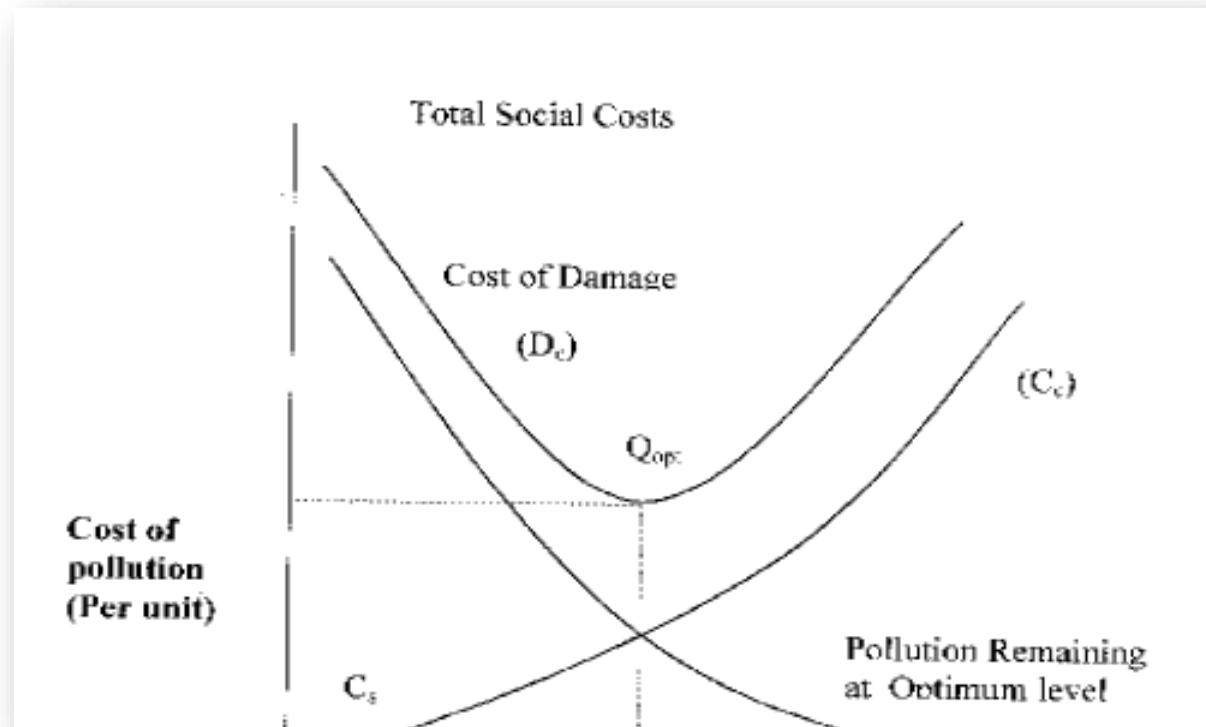
Presentation of Result

The environmental pollution control is tool to manage to minimize the cost of mineral. It involves appropriate time and space to dispose of waste. There are various techniques used to increase the ability of the natural environment and to accept wastes and pollution without significant damage to social or ecological systems. Finally, residuals can be treated biological, chemically, and physically to concentrate, contain, isolate, detoxify or recycle them with minimum exposure to social, and mine environmental and ecological systems.

The optimum level of pollution control

One of the most important concepts in residual management is costs and benefits involvement in term of environmental pollution and waste minimization. Proper decision making involves a comparison of total project cost and benefit in order to choose an alternative that returns the appropriate benefit for the least cost, thereby allocating resources in the most efficient way. The ultimate goal of residual management is to provide the level of protection necessary for the prevention of significant damage to ecological and social system at a minimum cost.

The relationship between cost and benefit of investments in residuals control is showed in **Fig 1**(the model of optimum levels of pollution control). The model indicates that as the levels of Industrial pollution increases, damage to the environment also increases. That is, the Industrial environment with little or on ecological socio-economic damage can tolerate a small amount of Industrial pollution because development cannot take place free of cost. However, as sharply after the system's capacity to assimilate Industrial pollution has been exceeded.



Conversely, as the level of Industrial pollution is progressively decreased, the costs of control increase. Studies of the actual costs of Industrial pollution and pollution control suggest that the shapes of the curve in the model accurately represent the real world situation. The model indicates that, initially, considerable Industrial pollution can be eliminated at very low costs. However, in the push to achieve a progressive cleaner environment, costs rise disproportionately fast and benefits begin to level off. Eventually, by adding the costs of pollution damage and control for each level of mine pollution, the total costs of mine pollution to society are obtained. At extremely high and low level of contamination, the total social cost area is high. However, at the point of optimum level of pollution, total social costs are minimized. The benefits of further reduction in the level of pollution are far outweighed by the costs of control. Also levels of damages that are considerably greater than the optimum result in damages that are considerably greater than the costs of cleaning up.

The optimum levels of pollution control are useful indicators that affect inefficient pollution control strategies and inaccurate estimates of pollution damages. Inefficient pollution controls would increase the control costs from line C_s (cost of starting) to line C_c (cost of control). The real damage curve would move from line D_c (cost of damage) to line D_o (pollution remaining optimum level) which indicates further pollution. Investments are warranted to incorporate all damage costs results in an under investment in industrial pollution controls and an overly polluted environment. The model assumes perfect knowledge of the costs of damages and controls and that damage and cost of controls are proportionate to the level of pollution. The weight of cost and benefit is a regular, although implicit or hidden, occurrence in agency decision-making processes. For instance, decisions to relax automatic emission standards involve a balancing of control costs with human health impact and costs.

Conclusion -----

The cost benefit analysis is a useful tool to predict the damage caused by the mining in term of its impact of cost which can help management to take precautionary measure to minimize the damage and reduce the cost.

It will heavily reduce the costs of health service, improved productivity, minimize the losses of crops and forests, improve the life system etc. It reduce s protection cost of buildings attested by pollutant, minimize expenditure on imports of energy and raw materials.

environmental quality controls can offer more suitable benefits. Environmental controls reduce the need for defensive products, such as medical care health and life insurance burglar alarms and soon by improving the health and living condition of the general populate.

The economic, health, physical, and social benefits of mine environmental quality controls clearly outweigh the costs. In true economics sense, mine environmental controls provide a valuable service to citizens by promoting health, safety, welfare, peace, and permanence.

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