Executive Summary

Introduction

Krishna Project Stage – I consists of Dhom Dam, Kanher Dam along with Canal Works of Dhom, Kanher and Arphal as per sanctioned project report to irrigate 74000 Ha. of irrigable Area.

Krishna Project Stage II consists of (a) constructing dams on Kudali River & utilizing the water by Dhom Right Bank Canal, (b) Constructing 9 K. T. Weirs on Krishna & Venna River along with 5 Lift Irrigation Schemes and utilising the water to irrigate 14130 Ha. of Wai, Koregaon & Karad Talukas of Satara District.

By diluting the cropping pattern of Dhom & Kanher Projects the revised water planning for above 5 Lift Irrigation Schemes and overall water planning of Krishna Project (28.59 TMC) is approved vide MKVDC, Pune's letter No. MKVDC/797/(1058/97)PB-7 Dt. 21/03/1998. According to which the water planning for Dhangarwadi Lift Irrigation Scheme is 0.79 TMC.

The proposed Dhangarwadi lift Irrigation Project is administratively approved by Government of Maharashtra (MKVDC Letter No. MP / 4/299/ (437/2000)/4604 dt. 15/05/2000.

Dhangarwadi Lift Irrigation Scheme is a part of Krishna Project II and is proposed at Ch. 58/225 of Arphal Canal near Village Helgaon, Taluka – Karad, Dist – Satara. The work of Arphal Canal is already completed and water is being released through it as per requirement. The cost of the project is Rs. 87.10 crores

Salient Features

Sr. No.	Particulars	Details
1.	Name of Scheme	Dhangarwadi Lift Irrigation Scheme
2.	Longitude	17° 27' 28" N
3.	Latitude	74° 9' 52" E
4.	Revenue Village	Helgaon

Sr. No.	Particulars	Details
5.	Tahsil	Karad
6.	District	Satara
7.	State	Maharashtra
8.	Nearest Railway Station	Targaon, Tal. Koregaon Dist. Satara
9.	Nearest Air Port	Karad Tal. Karad Dist. Satara
10.	Source of Water	Arphal Left Bank Canal Km. No. 59
11.	Static Head	Stage I - 67.059 m Stage II - North – 24.00 m. Stage II - South – 34.00m.
12.	No. of Pumps	Stage I - 4 Nos of 408 H.P. Stage II - North – 2 Nos of 180 H.P. Stage II - South – 2 Nos of 135 H.P.
13.	Rising Main Length & Diameter	Stage I - 2610 m. of 900 mm Dia. & 7 mm thick Stage II - North - 1560 m. of 650 mm Dia. & 6 mm thick. Stage II - South – 417 m. of 530 mm Dia. & 5 mm thick
14.	Discharge	1.222 Cum/Sec.
15.	Irrigation Potential	Cropped Area – 3025 Ha. ICA – 2500 Ha.
16.	Electricity Required	1.73 MW
17.	Water Utilization	0.79 TMC
18.	Cost Per Ha.	Rs. 3.22 Lakh / Ha.
19.	B. C. Ratio	1.58
20.	Submergence Area	Not Applicable.

Objectives of the Study

As per the EIA Notification 2006 proposed project falls under the Category 1(c)-River Valley Project; and will be appraised by the SEIAA as the command area is less than 10000 Ha. in meeting of 74th SEAC-1 held on 5th, 6th & 7th March 2014 (Item No. 7) and has approved Terms of Reference (TOR). Accordingly EIA and EMP studies have been carried out. The objective of the study is to identify the impacts on account of the proposed project activities in the study area and carryout the Environmental Impact Assessment study. EIA consist identifying the impacts, Ways to mitigate the negative Impacts and suggest the plan to augment the positive impact. EIA is a management tool for planners and decision makers as it covers the

current status of the project site, the impact of the project on surrounding and suggests means to mitigate the negative impacts. To minimize the environmental losses through technical judgment, development of Environmental Management Plan is important.

Two broad types of methodologies viz. Field Surveys Methodology and Impact Assessment Methodology were followed for the above studies. Further study is based on Collection of Secondary and Primary data, Focused Group Discussions, Sample survey of families and farmers likely to be affected by the project.

Description of the Environment

Meteorology

The climate during summer season is hot. Climate in months of November to February is pleasant with moderate humidity. The major rain fall takes place from June to September. However maximum rainfall occurred during months of July and August, while rest of the year shows traces of rain.

Seismology

The project area lies in zone II of Seismic Zone Map with low Seismic activity.

Ambient Air Quality

The air sampling was carried out so as to determine the ambient air quality. Ambient air quality is also indicative of kind of activities happening in the surrounding. Sampling stations were selected including the downwind, upwind and cross wind spread across command. Assessment of the present ambient air conditions has been done by studying the air quality at 08 different locations. All the parameters are well within the National Ambient Air Quality standards.

Noise

The environmental impact assessment of noise from the proposed project, construction activity, and vehicular traffic can be undertaken by taking into consideration various factors like

potential damage to hearing, physiological responses, and annoyance and general community responses. Noise level monitoring carried out at 11 locations in the command area. Noise level observed in command area is well within the limit.

Water Quality

The pH of all the surface and ground water samples is well within the limits as per the standard IS: 3025: Total dissolved solids are also within the desirable limit of 500 mg/l.

The chloride levels are well within the desirable limit of 250 mg/l at all the locations. Calcium levels most of values are found to be within the permissible limits of 75 mg/l. The coli forms in all water samples are found to be present in most of the ground water samples.

The quality of the ground water is mainly dependent on the geological formations of the region. The water can be used for drinking purposes after disinfection.

Soil Environment

In the project area, majority of the soils were found to be silty clay in nature. Out of 6 soil samples examined for the physical properties, all 6 soil samples were found in the Silty clay category followed by clay and silty clay loam category.

Ecological Status

The vegetation of the area is deciduous type along with open scrub land. As per the ecological studies conducted it can be seen that the study area shows extreme species diversity. Total 63 floral species recorded & no RET floral species is reported in the study area. The most abundant species in the study areas are *Carissa congesta Mangifera indica* L, *Agave cantula* Roxb, *Cynodon dactylon* (L.) Pers., *Heteropogon triticeus* (R.Br.), *Syzygium cumini* (L.) Skeels, *Pongamia pinnata* (L.) Pierre etc.

Six species of Mammals, 9 species of Amphibian & Reptiles and 57 species of birds were recorded in and around the periphery of the project during the study period. Animals, which

are found surrounding the project area and categorized under, schedule I to Schedule IV of Wild Life Protection Act 1972 & subsequent amendment.

Socio-economic:

Total 16 villages from Koregaon and Karad taluka of Satara District will be benefited. Wathar kiroli has the highest population (5267) and households (1113) in command area.

On an average 74.69% population is literate while 25.30 % the population was reported to be illiterate.

The villages in the command area of project area show a 8.34 % SC population & 0.30 % ST population.

Project villages and urban areas showed mixed results for the total working and dependent class of population. Total working population is estimated to be 52.91 % as compared to 47.08% of the nonworking population.

Environmental Impact Assessment

a) Impacts on Air Environment

Construction Phase

The proposed project is a lift irrigation project thus construction of various components will be carried out throughout the command area. This is bound to put a localized impact on the air quality of the area. The main impact on the air quality due to the proposed project is during the construction phase due to excavation, site leveling, transportation of materials etc. wherein there will be increase in the Suspended Particulate Matter (SPM) levels at the construction site. However the levels of SPM will be mainly dependent on the intensity of excavation operations and transport of material. Similarly drills, shovels, trucks of different capacity will be engaged mainly for extracting and transporting the material. The material required for the construction of the structures will be transported from the nearby city and around. There are also chances of gaseous pollution (NOX, CO & HC) due to automobile exhausts and diesel operating

construction machinery. Though the construction sites are spread over the command area, the impact on the present ambient air quality will be localized and temporary in nature. Human settlements are sparse in the command. As human settlements are sparse and well spreads, less impact on the human health especially near the project components such as rising main, closed conduit distributaries, minors and sub minors.

As discussed above, the project area is wide and covers various villages within the command area. Also the command area is less developed and has little industrialization. So fear of present load of air pollutants adding to existing air is untrue. The ambient source of pollution includes sporadic vehicular traffic and domestic fuel burning. The study also revealed that, on the whole, the area has a rural setting. The project components are not in the vicinity of concentrated human settlements thus, the construction activity is predicted to have little impact on the human settlement.

However, the impact on ambient air during the construction phase is negative, though the impacts are temporary in nature and reversible. Mitigation measures as suggested in Environmental Management Plan (EMP) will help in reduction of local dust, smoke and exhaust emissions during construction phase. This will include care during excavation and transportation over non-metaled roads near the project site, such as frequent water sprinkling in the vicinity of the construction activity, care during excavation to reduce fugitive dust from the construction activity, material handling and from the truck movement in the vicinity of the project site, and ensuring maintenance of both the gasoline and diesel powered construction vehicles/machinery to minimize the smoke in the exhaust emissions. However as the activities are confined till the construction of the project the impacts envisaged are temporary and will gradually subside as the project construction succeeds.

Operation phase

During the operational phase the water will be lifted from the site with the help of electricity operated pumps. The water within the stages move by gravity and finally distributed to the farmers through canals, minors/sub minors based on gravity flow. Thus the whole process will

not include pumping or lifting of water through diesel operated pumps, thus nullifying the possibility of air pollution by the pumping activity. The vehicular movement at the site will be not so frequent and thus will not put a serious pressure on the ambient air conditions during the operational phase.

b) Impact on Water Resource

The present status of ground water quality was assessed by collecting the samples from the project area. All the parameters assessed were compared with the water Standards as prescribed by Maharashtra Pollution Control Board (MPCB) for drinking and irrigation. The water in its present status is not recommended for the domestic purpose. But it can be potable after a course of proper disinfection and treatment procedures. The overall quality of ground water was found average. The water was alkaline to neutral in nature and hardness found to be moderate to hard. However, enhanced ground water levels would be beneficial in influencing quality of groundwater. At present as the ground water is being used predominantly for irrigation purpose.

Construction Phase

In the construction phase, ground water pollution can take place only if there are dumps containing chemical substances, which will get leached by precipitation of water and percolate to the ground water table. This is not the case with the present project, as the activity doesn't contain any use of chemical and harmful ingredients, which could leach down to water table. Hence impact in the ground water quality is not anticipated from the project during the construction phase.

Operation Phase

Inception of water through the proposed project is expected to increase the ground water level due to letting out/filling percolation tanks, Nalla bunds and M.I Tanks etc, thus leading to intensification of agricultural activities of the surrounding areas. Agricultural intensification may increase the usage of pesticides, insecticides and fertilizers and other agriculture chemicals.

These chemicals may seep into soil along with the runoff and may ultimately join the ground water. Hence there is possibility of deterioration in ground water quality over the period of time due to indiscriminate use of pesticides, insecticides and fertilizers surrounding the project area. But the project is envisaged to provide water for irrigation thus using the available water will be preferred as compared to the ground water.

Possibilities are that due to increase in the groundwater level, anthropogenic activities will gain importance based on the common wells. Excessive use of water in the area may again deplete the water level during the summer season thus causing draught conditions.

Imparting education for sustainable use of water through local NGO's can alter the misuse of ground water. Implementation of SCADA technology will also help to minimize the use of ground water as the canal water will be available on demand. Also creation of awareness of organic farming practices would reduce proposed deterioration of ground water quality due to agricultural intensification.

c) Impact on Ecological Resources

The overall command area represents poor soil cover and highly degraded vegetation. Trees have been reported mostly along the border of the agricultural fields and the water bodies. The vegetation is predominantly dry deciduous type with a number of xerophytic elements. Overall the entire region falls in the rain shadow region of Maharashtra and is dominated by scrub vegetation. The tall trees are either planted or present along the borders of the agricultural fields and watercourse. No rare floral species have been reported from the proposed command area.

Construction Phase

Various initial project activities such as land clearance, cutting, filling and leveling will lead to impacts such as removal of vegetation from the soil and loosening of the topsoil and leading to soil erosion. However, these impacts will be confined to the area where the project components are to be constructed. Also they will be temporary and can be easily mitigated by

adopting measures like paving and surface treatment, water sprinkling and appropriate plantation programme. Creation of green belt with variety of trees will enrich the ecology of the area and add to the aesthetics.

The construction activities will invite a major labor force from the adjoining areas. Camping at the site will pressurize the local flora as they will be used for fulfilling the need of fuel. Also running of vehicles, other equipment's at the site will increase the ambient noise level and may cause a temporary migration of the local fauna. It is suggested to provide the labours with alternative fuel source during the construction phase so as to reduce the pressure on the local flora.

Occurrence of rare or about to extinct species was not found during the survey. The vegetation in the project area is dry – deciduous, sparse and mostly restricted to slopes of the hills. On faunal point of view, construction activities needs to be restricted to day hours only and the movements of workers and vehicles should be completely restricted during early morning and late evening when wildlife activities are at peak. The construction activities generating noise needs to be synchronized in order to keep the exposure to such a noise to the minimal. Strict instructions to the workers and contactors need to be given on ban on hunting of any faunal species and cutting of vegetation within the project area. Also their timber and fuel wood requirements should be met from outside of adjoining forested areas.

Operational Phase

The area is dry and comes under the rain shadow region. Most of the natural vegetation is secondary in nature and has indication of high level of human disturbance. Many species such as Acacia, Prosopis, Glericidia, Butea, Terminalia, Wrightea, Carissa, Syzygium, Lantana, Tectona, Jatropha, Azadirachta etc are commonly observed. Most of the hilltops as well as lower hills are degraded and has less soil cover. Relatively good vegetation cover is present on the inaccessible hill slopes. Due to inception of the present project water will be available for almost round the year and would enhance vegetation cover.

The majority of faunal species found would be least impacted because their habitat requirements are too general and will be met easily from the adjoining areas. The water availability in the canal network and distribution chambers will be very beneficial for the aquatic life and birds. It may enhance attracting local migratory and water birds. Availability of sufficient water will attract the wildlife, which is now summer scarce. This might promote marginal increase in wildlife population around. Availability of water will promote growth of shrubs and bushes in the area and may provide suitable conditions for nesting and breeding of aquatic and migratory birds. Overall, these activities would also help to minimize the negative impacts on the existing wildlife and boost favorable impacts.

Overall, for dry areas, augmentation of water as proposed during the project would reduce the negative impacts on the existing wildlife and boost positive impacts. Plantation of locally dominated plants will serve as perching sites for hawks & even peacocks. The canopy of cultivated forest with fruit bearing trees will improve the number of arboreal mammals. The perennial water body will certainly assure the enriched life & even population of birds.

d) Impact on Aquatic Ecology

Availability of water in the semi arid and dry area which has been mostly under rain shadow can cause changes in the ecological diversity.

Construction Phase

The construction activities involving leveling of site, piling, excavation, etc. leads to marginal increase in the turbidity of the river. The impacts will be however during the construction phase which is short term. Also the major change is increase in turbidity which is physical and can be restored.

Operational Phase

One of the critical factors that may have a negative impact on the aquatic ecology is that the growth of weeds or floating weeds in the canals and at the approach channel in the river is liable to cause considerable nuisance and adversely affect the aquatic flora and fauna. The

growth of aquatic weeds such as Cyperous, Typha etc will impact adversely on the carrying capacity of the water canals and also cause flooding and leakages of the water canals

e) Impacts on Soil

The impact on soil is in terms of top soil erosion. Soil erosion takes place due to cutting of trees and loosening of topsoil because of various construction activities. Therefore such activities need to be well planned to reduce intensity of their negative impacts. The details of soil quality are provided in Chapter 5.

Furthermore, the analysis results as far as nutrients are concerned show that the soils are not very rich in nutrients. These soils will have an average production potential. Availability of water will cause these soils to be worked throughout the year. Subsequently, nutrients supplements will most probably be added to these soils. Now additionally if these soils are also waterlogged due to over irrigation, there is a threat of the soils becoming saline. Hence a general awareness about the soil and its quality needs to be made among the locals. According to quality of irrigation water it is suggested that this kind of water can only use for the well-drained porous soil.

f) Impacts on Socio-economic Environment

This section discusses the project activities and the extent of the potential impacts on the socioeconomic conditions in the study area.

- **Employment Generation**

Due to the proposed Project, there will be a employment generation. During construction and operation phases, the local community will be benefited due to more jobs opportunities in the industries and commercial establishments. Jobs would be created for unskilled, semi skilled and skilled labor categories for which local people would be given preference. This will lead to economic development and social upliftment of the region. This will be Permanent High positive impact.

- **Impact on Public Health**

The health survey that was carried out as a part of this study indicates that overall in the command area occurrences of water borne disease is seen occasional and moreover are concentrated to rainy season. HIV is mostly due to migration caused in the search of livelihood. The occurrences of HIV are at both the places, which have sufficient water and those having scarcity of water but in later cases restricted mostly towards the labor community. However, to avoid the spread of HIV the best possible method will be undertaking awareness programs. Some of the PHCs have already initiated work on these lines. It is also seen that there is a marked difference between the pattern of diseases as well as health status of the communities residing in dry and irrigated areas. Due to scarcity of water, improper purification and poor sanitation facilities prevail and there is a wide prevalence of dysentery, diarrhoea, typhoid, and malaria and worm infestation. In water excess areas, malnutrition and anemia seems to occur widely but restricted mostly to the migrant laborers and women folk of the region. Major concern is the migrant population who contribute largely in spreading of the contagious diseases like tuberculosis and leprosy. There are substantial cases of alcoholism in most of the command area villages. Another problem associated with water scare area is poor health awareness and low treatment seeking behavior. Among elderly population arthritis is also observed.

Overall the comparison of water scarce and water sufficient areas have revealed that implementation of the project will prove beneficial for both the economic and health upliftment of the communities in the command area.

- **Economic Condition of the study area**

This project will increase the economic activities around the area, creating avenues for direct/indirect employment in the post project period. Due to availability of assured water the opportunities in agriculture will increase the income level of the people. This will improve overall economic condition of the study area. This will be Permanent High positive impact.

- **Aesthetics Environment**

The availability of water in command Area would enhance the aesthetic value of the site. Additionally the proposed plantation of native species along the reservoirs and canals would enhance aesthetic value of the project area. Greening or barren areas because of year round availability of water is another such activity enhancing the aesthetics of the region. This will be Permanent High positive impact.

- **Impact on Historical, Archeological and Architectural Sites**

There is no listed heritage/ archaeological site within the site and the buffer zone. Therefore these will not be affected due to the project. Hence, there will be no impact

Environmental Management Plan

Comprehensive management plan has been prepared and measures to minimize impacts are suggested as follows

- During excavation and transportation over un-metalled roads near the project site, there is a scope for local dust emissions. Frequent water sprinkling in the vicinity of the construction activity should be done and it should be continued even after the completion of the dam construction, as there is a scope for vehicular movement.

- Excavation should be carried out in such a manner that will not reduce slope stability. As much of the top soil and waste materials as possible should be used for landscaping and leveling activities in the surrounding area.

- Since there is likelihood of fugitive dust from the construction activity, material handling and from the truck movement in the vicinity of the project site, the authorities should go for tree plantation programme along the approach roads and the construction camps.

- The construction site should be provided with sufficient and suitable toilet facilities for workers to allow proper standards of hygiene. These facilities would be connected to a septic tank and maintained properly to ensure minimum environmental affect. Care should be taken not to route the sanitary effluents to the river.

- Though the noise effect on the nearest inhabitants due to construction activity will be negligible, it is advisable that on site workers using high noise equipment shall adopt noise protection devices like earmuff and earplugs. Noise prone activities should be restricted to the extent possible during nighttime, particularly during the period 10.p.m. to 6 a.m. in order to have minimum environmental affect.

- It should be ensured that both gasoline and diesel powered construction vehicles/machinery are properly maintained to minimize smoke in the exhaust emissions. The vehicle maintenance area should be located in such a manner to prevent contamination of surface and ground water sources by accidental spillages of oil. Unauthorized dumping of waste oil should be prohibited.

- As soon as construction is over the surplus earth should be utilized to fill up low-lying areas. The rubbish should be cleared and all un-built surface reinstated.

- Reclamation of borrow areas is imperative, however, in present case due care has been taken to identify the borrow areas within the submergence zone. Any quarry pit dug beyond the submergence area should be filled up properly and deep excavations should be avoided. After filling, plantation should be raised on the borrow areas.

- To prevent unauthorized felling of trees in the nearby forests by construction workers for their fuel needs, it should be ensured that the contractor provides alternative fuel to the construction workers and not allow use of firewood as fuel.

Management of Physical and Environmental Resources

The mitigation measures to be taken-up during the construction and operational phases are suggested below.

Surface Water Hydrology

The present project envisages lifting water from upper Arphal Canal. Based on the details of water availability the present water availability is calculated. This will not impart any stress on

the present water utilization. Thus there will be negligible impact on the surface water hydrology.

Water Quality

As illustrated in previous Chapters, the existing surface water and ground water quality is not potable in its existing state. Thus for its continuance for domestic use and irrigation use, it is suggested that the water should be disinfected so as to meet the relevant standards. Long-term effects on the water quality should be minimized by implementing the following measures:

Recommendations:

- A regular monitoring programme of water quality in the river should be undertaken to evaluate the actual alterations of water quality and their effects on fisheries resources and other water users.
- In addition to the above, ground water quality and water table fluctuations in the command area should be monitored.
- Excess irrigation is to be avoided by avoiding flood irrigation.
- Adoption of the efficient and water saving technologies such as drip irrigation and sprinkle irrigation will be of great importance.
- Proper crop rotation, intercropping, use of trap crops, organic farming will help in lowering down the use of chemical fertilizer, pesticides and herbicides.
- Frequent monitoring of soil and irrigation water quality is essential for the recommendation of fertilizers doses to various crops. So that excess use of the fertilizers can be avoided.
- Avoiding the anthropogenic activities in and around the canal network is strongly recommended. This will reduce the pollution due to anthropogenic activities.

- Proper disinfection of water by conventional methods before its domestic use.
- Treatment using filter or with UV radiations required to be promoted to treat water at individual level so that the hygiene is maintained.
- In order to avoid any problems that may occur due to use of recycled water for agriculture purpose, it is recommended to impart proper training to the farmers of the command area.

Water Logging

Water logging can be a major problem in the command area if improper irrigation and drainage practices followed. Conditions will aggravate further since the nature of the soil is clayey. Thus a command area development plan needs to be prepared to address any negative problems such as water logging situation that may arise in command area. Additionally, since the topography of the command area is undulating, its slope will help to drain the water from even the moderately drained soils. Thus preventing the water logging problem to certain extent.

Ecological Resources

- ❖ The judicious sequencing of construction, operation and appropriate location of labour camps, project colony etc.
- ❖ The movement of vehicles should be strictly monitored and excessive blowing of horn and lighting in the night should be avoided. Such activities may cause disturbance to the local fauna.
- ❖ Strict law enforcement should be undertaken for conservation of wildlife; and

Public Health and Nutrition

- ❖ Provision of adequate medical facilities to take care of working personnel and construction laborers at the camps.
- ❖ The data collected should be used in establishing a programme with the help of concerned

State Government department for alleviating adverse public health impacts and improving health status of the people in the area.

a) Land Use Management

- Green belt development using local species of plants should be taken up all along the approach roads and around construction camps and the boundary of the reservoir;
- All disturbed construction areas, on the periphery of the construction site should be replanted with native plants to minimize impact and future erosion.

EMP Cost

It will include the cost of the factors required for the Environmental management.

Budgetary Cost Estimates for Environment Management

Sr.No.		**Particulars**	**Unit cost**	**Total (Rs. In Lakhs)**
1		Meteorology		
	a	Rainfall and evaporation	Yearly	0.50 per year
2		Water Quality		
	a	Surface water (5 locations)	Monthly	0.25 per month
	b	Ground water (5 locations)	Monthly	0.25 per month
	c	Ground water Table (10 wells)	Two seasons	0.25 per season
4		Ecological Resources		
	a	Terrestrial ecology	Average cost per year	1.5 (per year)
	b	Aquatic Ecology	Average cost per year	0.5 (per year)
5		Soil characteristics (10 locations)	Once in a year	0.5 (per year)
6		Initial Investment for Greenbelt development	Lumpsum	10.0

Sr.No.		Particulars	Unit cost	Total (Rs. In Lakhs)
7		Recurring Expenditure on plantation	Lumpsum	1.0 (per year)
8		Command Area Development	Lumpsum	3.0

Environmental Monitoring

The monitoring of various environmental parameters is necessary and is an integral part of the environmental protection measures. Monitoring is as important as that of control of pollution. A comprehensive monitoring programme is suggested here. Environmental attributes to be monitored are Meteorology; Water Quality; Siltation Rate; Ecological Conservation of Habitats and Up-gradation; Soil Characteristics; Catchment Area Treatment, Command Area monitoring.

Conclusion

Environmental Impact Assessment studies as worked out by Matrix method in Chapter No. 4, by considering all the concerned aspects show that the impacts on environment during the construction phase is showing the negative impact on air, noise, water quality, soil and the land and impact due to construction waste and land acquisition process. However Environmental Monitoring Plan and execution of Environmental Management Plan will minimize the negative impact to considerable level.

During operation phase due to availability of assured water supply the positive impacts will be on socioeconomic condition, landuse, ecology biodiversity and water quality are envisage. These impacts will be for the long term.

After implementation of the project, agricultural production will increase in the command area of this project, thus improving the present financial status of the people living in the area. Due to supply of irrigation water, drinking water, the economy of the area and quality of life in the study area will improve.