Executive Summary

Chapter 1: Introduction

- M/s Vitthalrao Shinde Sahakari Sakhar Karkhana Ltd, acronymic [VSSKL], is a presently became one of the major industry in the area. This industry was established by Shri Babanrao Vitthalrao Shinde. VSSK is an important milestone in Agro-industrial transition conceived by Shri Babanrao Vitthalrao Shinde. VSSSKL is contributing to change the Social & economic environment of the area.
- M/s Vitthalrao Shinde Sahakari Sakhar Karkhana Ltd, is established in the year of 2001 by Shri Babanrao Vitthalrao Shinde (MLA). The proposed Expansion of Sugar 8500 TCD to 11000 TCD, Co-gen 38 MW To 49 MW and additional Distillery of 90 KLPD with existing 60 KLPD at Gangamainagar- Pimpalner, Tal- Madha, Dist- Solapur, State-Maharashtra. The plot admeasures of proposed area is about 636502 sqm. And there is no change in land use pattern. The expansion project will be done within the existing premises.
- The Factory has been performable extremely well. It has excellent communication facilities & is connected by rail & road ways. This place is easily accessible for transportation of raw material. The notification no. S.O. 1533 promulgated on 14th September 2006 have covered these type of industries under its entry 1(d), 5(g) & 5(j). It is stated that captive power plant, Distillery & Sugar processing industry respectively.

Chapter 2: Project Description

- **Location of Project**

  The geographical location of the project is 18^{o}02$^{'}$57.70$^{''}$ N Latitude & 75^{o}15$^{'}$11.75”E Longitude with an elevation of 515 m above mean sea level. Local authority has assured to provide all infrastructures like assures Electrical power, continuous water supply with purification from water works having rapid sand filtration [RSF], internal road network, external approach road etc.

- **Manufacturing Process**
  - Sugar
    a. Harvested cane transport to the factory & Where cane weighing is done on Weigh Bridge
    b. Cane carrier & Cane kicker can help for upcoming process.
    c. In fibrizor the cane is cut in fine pieces to make possible juice.
    d. Then in four mill tandem, cane is crushed in three rollers to get maximum juice.

e. After crushing Raw juice is heated at 35°C & up to 70°C.
f. Then sulphitation process done with adding the milk of lime as well as SO_2 is passed through juice. Sulphited juice again heated up to 102° C to 103° C.
g. After that the scum settled through the Rapi Dorr & then Clear juice from rapi dorr is heated again in tubular juice heaters up to 100- 111° C.
h. Clear juice contains around 70% of water. The clear juice is boiled / heated in a series of 4 to 6 evaporator vessels to evaporate water from clear juice.
i. Thick clear juice obtained from evaporator vessels called syrup is taken on pan floor and boiled in the pan bodied. Pan is also a vessel in which syrup is boiled. The pan is boiled up to proper size of crystals are formed.
j. After the crystallization process in pan a ready material containing sugar crystals called massecuite. A ready massecuite is rotated in centrifugal machine having high RPM to separate sugar and mother liquor from massecuite.
k. In Hooper, Separated Sugar from centrifugal machines dropped in to the hoppers where sugar is dried and cooled down.

❖ **Co-Generation**

Co-generation will be done through steam turbines of double extraction condensing route by 40 TPH boiler at 540° C steam temperature & using steam turbines for T.G. Set

❖ **Distillery**

a. Molasses is used for production of alcohol. Molasses contains about 50% total sugars, of which 30 to 33% are cane sugar & rest are reducing sugar. During Fermentation, yeast a living micro-organism belonging to class fungi converts sugar present in the molasses such as sucrose or glucose in the alcohol.
b. Continuous Fermentation: Molasses, diluted with the water to the desired concentration is metered continuously into fermented.
c. Yeast Cycling: The yeast in the fermented wash is removed as 45 to 55 % v/v slurry & is returned to the fermenter.
d. Fermented Wash to Distillation: Clarified or de-yeasted wash flow by gravity to the propagation vessels no. III which during continuous production, operates as an intermediate wash tank from here fermented wash is pumped to the wash preheated, which uses vapors from the distillation column to preheat wash.
e. Wash Weak Recycling: Weak wash is cooled, first against the deyeasted wash entering the column & then against water in the trim cooler & recycled back to the fermenter.

f. Propagation: During propagation it serves the in volume builds up. When the fermenter enters the continuous production mode, propagation vessel III is used as an intermediates wash tank. Propagation is carried out only to start up the process initially or after very long shutdown during which the fermenter is emptied.

g. Distillation: Pre heated wash at around 72-74^0 C enters the top of degasifying column, which is attached the analyzer column. Analyzer column bottom temp has to be maintained around 80-80^{0}C with the help of reboiler, where in heat is exchanged through the vapors from rectifying column top. From degasifying column part of the vapors will go to the aldehyde column to remove low volatile compounds which has been formed during fermentation like acetaldehyde and methanol.

- **Project Cost**
  - Total Project Cost 162 Cr.
  - CSR Cost 4.05 Cr
  - EMP Cost 33.3 Cr
- **Raw Material**
  - The main raw material for sugar is Sugar cane, Lime & sulphur.
  - Raw material for Co-generation is Bagasse.
  - For distillery, the important raw material is Molasses.
- **Water Management**

  The total water requirement after expansion is 1305 m^3/day. [Sugar + Co-gen + Distillery]
- **Utilities**
  - Power Requirement: the total power generation here will be 49 MW/day. The power for the factory will be consumed from the in-house production & excess will be sold to the MSEB.
  - Boiler: 3 nos. of existing 40 and 70 TPH and proposed 150 TPH capacity boiler with the fuel Bagasse.
  - DG Set: Proposed DG set capacity shall be 500KVA
  - Fuel for DG set: Fuel used will be HSD.
- **Waste Water :**
  - The technique is really useful in achieving the full proof technology of zero pollution by adopting the approach of Bio-digestion + MEE + Incineration Boiler.
  - By adopting the above technology, it is possible to achieve not only zero pollution but also will utilize fully the nutrient values and organic matter of Spent wash for the resource generation.

- **Air Emissions:**
  - The air pollution caused by this industry is mainly from boiler. The boiler will be provided with ESP to combat ash pollution.
- **Solid Waste Management:**
  - The main solid waste from factory will be of non-hazardous from office, garden and boiler ash. Non hazardous waste will be segregated as compostable and saleable. Solid waste such as yeast sludge and Boiler Ash are mixed with press mud and converted to bio compost will be made available to nearby farmers.
  - The hazardous waste from ETP and process will be generated. Spent oil will be burnt along with bagasses in co-gen boiler. ETP sludge, distillation residue will be used as manure.

Chapter 3: Description of Environment

Base line environmental studies were carried out, as per TOR received from MoEF&CC, New Delhi.

Study area: The study area is defined as area within 10 km radius from proposed expansion site of boundary.

- Baseline Environment: Solapur has a semi-arid climate with three seasons, a hot, dry summer from the middle of February to the middle of June, a monsoon from the middle of June to late October and a mild cool season from early November to early February. The total rainfall is about 22 inches (580 mm).

Table No.11.1 Average meteorological condition at Solapur

Particular	Temp		Wind Speed	Wind Direction	Rainfall	Relative Humidity	
Unit	°C		Km/h	Degree	Mm	%	
	Min	Max	Max	Co-related to Max Wind Speed	Max	Min	Max
March	19	41	16.7	100	0	13	68
April	25	43	24	70	3	8	53
May	25	44	24	10	2	15	81

Ambient Air Quality:

Ambient Air Quality monitoring stations were set up at 9 different locations. Parameters recorded are as follows:

- $PM_{2.5}$
- PM_{10}

- SO_2
- NOx
- CO
- HC

The observations are as follows:

- Maximum concentration of SO_2 was 29 µg/m^3 at Project Site & minimum concentration was 8 µg/m^3 at Ambad.
- Maximum concentration of NO_x was 37µg/m^3 at Project Site & minimum concentration was 13µg/m^3 at Shedsinghe.
- Maximum concentration of PM_{10} was 70µg/m^3 at Project Site & minimum concentration was 31.5µg/m^3 at Pimpalkhute.
- Maximum concentration of $PM_{2.5}$ was 40µg/m^3 at Project Site & minimum concentration was 15.6µg/m^3 at Donwadi.
- Maximum concentration of CO was 1.94 µg/m^3 at Pimpalner & minimum concentration was 0.09µg/m^3 at Shedsinge.
- The levels of HC were found below detectable limit.

Noise:

Noise levels were recorded at 10 different locations within the study area. Observation as follows.

- Minimum and Maximum Noise level observed in day time was 43.36 dBA and 51.42 dBA at Venegaon and Project Site respectively
- Minimum and Maximum Noise level observed in night time was 40.50 dBA and 44.92 dBA at Venegaon and Ambad respectively
- The all observation was below the limit of standard Noise level Limit.

Land Use:

A recent satellite image for study area was collected from NRSC. The image was interpreted for identification of various land use / land cover classes. Ground truthing was done to confirm and edit the interpreted land use / land cover classes.

Land use of the study area has been classified into **1)** Built up area (5.73%) **2)** Crop land (45.50%) **3)** Fallow land (21.02%) **4)** Water Bodies (0.89%) **5)** Scrub Land (16.26%) and **6)** Barren Land (10.61%).

Hydrogeology:

- The entire Solapur district is occupied by lava flows of the Deccan Basalt formation, which constitute the main rock formation of the district.
- **Groundwater:** Groundwater occurs mainly in weathered, fractured Basalt rocks with joints and fractures zones act as good aquifer. Detailed well inventory has been carried out in the study area.
- The groundwater occurs in the study area is found both under phreatic i. e. water table condition providing water to open wells and semi confined condition tapped by means of bore wells.
- **Dug wells:** The study area hosts most of the dug wells; they are mostly used both for drinking as well as irrigation (at places).
- Upper zone is covering with shallow depth soil and moderately weathered rock materials thus mostly all the dug wells in the study area are covered with cement lining of concrete or others are without linings.

Soil:

Soil samplings were carried out at 9 locations in the study area. Observations are as follow:

- The soil prevailing in Solapur district is mainly derived from Deccan basalts.
- The soil of the district is underlain by partially decomposed basaltic rock locally known as “Murum” which overlies parent rock. Due to more of less complete absence of leaching, the soils are base-saturated.
- As per Soil Classification, the soil within study area is mostly Clay Loam.
  The observation of soil sampling is follows as.
- The average soil texture of study area was clay loam.
- The maximum moisture content observed in the Village of Madha i.e. 10.48%.

- The minimum moisture content observed in the Village of Uplawate i.e. 3.1%
- Maximum water holding capacity of soil was observed at Village Nimgaon i.e. 65% & the minimum Water holding capacity was observed at Village Kanergaon i. e. 36%.

Ground Water:

Ground water sampling were carried out at 11 locations of the study area and analyzed for parameters mentioned in the Indian Standard IS 10500:1991. Observations are as follows

- All the heavy metals are found to be below the permissible limit.
- Total dissolved solids found high 2256 mg/lit at village Nimgaon.
- Highest Concentration of Hardness found 1287.04 mg/lit at Project Site and lowest concentration of hardness found 125.93 mg/lit at.
- Hence, the all parameters are within limit with IS standard [IS Desirable Limit of Ground Water.

Surface Water:

Form the study area it has 2 Talav, 1 Ujni Dam, 1 Nala and 2 Odha samples were collected and the observation is give as below.

- All the heavy metals are found to be below the permissible limit.
- Total dissolved solids found high 620 mg/lit at Saptane.
- Highest Concentration of Hardness found 251.85 mg/lit at Saptane and lowest concentration of hardness found 118.52 mg/lit at Kandhar.
- The comparison of surface water results with IS 2296:1992 shows within the standard.

Ecology & Biodiversity:

Ecology & Biodiversity survey was conducted on 16th February 2017 around the 10 km radius of project site. During the survey floral, faunal, agricultural species, avifaunal species were observed. The list of floral species is prepared based on visual observation during site visit and thorough review of site literatures and secondary data available with various government offices are referred for identifying rare or endangered species in the region. There are no endangered species of flora and fauna in the study area. There are no reports with the forest department about endangered species or notified protected species. Vernacular species are present in study area. Indian species such as *Hyena, Jackals, Wild Pigs, Red fox and Panther*. Typically vegetation is

composed of natural and cultivated type. Like *Babhul, Neem*. *Beshrami* is common weed in wet areas.

Socio-Economic Study:

Social survey is conducted on 4th March, 2017 to 6th March, 2017 in 23 villages to collect factual information by involving community. For secondary data primary census abstract of 2011, Government of India has been used.

Table No. 11.2 Solapur District Profile at Glance

Sr. No.	Socio Economic Indicators	Solapur district	Madha Taluka	Project Area (23 villages)
1	Population- Total **(Census 2011)**	4,317,756	301564	76846
2	-Male	2,227,852	157947	40233
3	-Female	2,089,904	143617	36609
4	Total SC population	649745	41377	10526
5	Total ST population	77592	2226	581
6	Total Child Population (0-6 Age)	538453	37219	8873
7	Total No. of Households	873167	62153	15706
8	No. of Villages		121	23
9	Total Literate Population:	2910676	201747	51423
10	-Male	1651266	115605	31556
11	-Female	1259410	86142	19867
12	Administrative set up	District Collector, Zilla Parishad, District headquarters	Grampanchayat Offices	Grampanchayat Office
13	Community Hall	Yes	Yes	Yes
14	Banks	Yes	Yes	Yes
15	Post Office	Yes	Yes	Yes
16	Bus Stand/ Bus stop	Yes	Yes	Yes
17	Weekly Market	Yes	Yes	Yes
18	Connecting road to villages	Yes	Yes	Yes
19	Existing Social Groups	Yes	Yes	Yes
20	Total Worker population	1898355	151139	38424
21	Total Main worker Population	1763175	142804	34498
22	Total Main Cultivator Popu.	607657	77940	20328
23	Total Main	508141	42793	12869

	Agricultural Laborers			
24	Total Non worker Population	2419361	150425	39122

Conclusion: The above table shows that there is a 52.35% population of males and 47.63 % population of females, total working population is about 44.89% out of that 26.45% are main cultivators and 16.74 % are the agricultural lobores. Out of total population there are about 66.91% population is literate.

The project has strong positive effects on average consumption in the project area, which is likely to lead to increase average income through multiplier effects and increased farm income and livelihood support activity for the villagers.

Chapter 4: Anticipated Environmental Impact Identification and Mitigation Measures

1. Air Environment:

Impacts

Various identified sources, in production of Sugar, Power and Alcohol that can cause potential impacts on air quality are emissions from:

- Emission during construction phase
- Emissions during operation phase from boiler of 40 TPH (2 Nos.), 70 TPH and 150 TPH.
- Emission from DG sets during power failure/ emergency purpose
- Emission form vehicular movement

Mitigation measures for air quality impacts will include:

- Air pollution control will be through the electrostatics precipitator and adequate stack height of 65 m for 40 & 70 TPH boiler and 85 m for 150 TPH boiler.
- DG Set has the stack height of 18 m with acoustic enclosure provided and it will be used in case power failure.
- Effective water spraying will be carried out on the access roads to control re-entrained dust during dry season (if required);
- Plantation within project premises and around the boundary will be done.

- Ensuring the availability of valid Pollution under Control Certificates (PUCC) for all vehicles used on site.
- Proper periodic maintenance will be all air pollution control equipments will be carried out to ensure its efficient operation.

Fugitive Emissions

A number of mitigation measures are taken to control fugitive emissions, the presence of which will be taken to Noticeable by plain vision if not controlled. Following are the measures:

- Rubber wheel carts/tricks to bring in raw materials, not filled high, sides cladded, slow speed travel, avoiding vibrations.
- Engineering the plant layout in such a way so as to virtually eliminate need of using heavy equipment for material handling in the main plant.
- Concrete flooring & wind barrier for bagasses storage yard.

2. Noise Environment

The proposed plant operations and related activities will lead to emission of noise that may have significant impact on the surrounding communities in terms of increase in noise levels and associated disturbances.

Impacts

Following activities would result in increase in noise level:

- Operation of plant
- Construction activity
- Vehicle/traffic movement

Mitigation measures for noise related impacts will include:

- Ensure hand-held concrete breakers are muffled
- Maintain machines regularly - they will be quieter
- Locate noisy machines away from main areas of activity.
- Fit silencers to combustion engines. Ensure they are in good condition and work effectively.
- Keep machinery covers and panels closed and well fitted. Bolts/fasteners done up tightly avoid rattles

- Selection of quieter tools/ machines.
- Enclose the noise sources
- Hearing protection by ear mufflers
- Reduction of noise by placing temporary noise barriers

3. Water Environment:

The proposed project will utilize 1305 m^3/day water during operation phase. The source of water will be from Ujani dam. Total wastewater generation will be 1358 m^3/day. This waste water shall be used for green belt development.

Impacts

- Effluent is generated from mainly from Sugar and distillery unit. Effluent will be generated from sugar plant units like, mill house, boiling house pumps, centrifuges and discharges from laboratory.
- This wastewater contains organic matter, oil and grease with BOD around 2000 mg/lit and COD of 5000 mg/lit.
- If this wastewater is not treated properly may affect surface as well as ground water quality.

Mitigation measures to reduce ground water related impacts are:

- Effluent treatment plant (ETP) is being installed to treat the wastewater.
- The total waste water generation of proposed project will be 1358 m^3/day.
- The treated waste water will be used for gardening.
- The spent wash from Distillery will be used for fired in boiler.
- The steam generated by the incineration boiler and power generated in the turbine will be used for distillery plant, IMEE, standalone MEE and incineration boiler.
- Thus the zero liquid discharge will be achieved.
- Efforts will be made to reduce water requirement by recycle and reuse of process waste water etc.
- Domestic waste water shall be reused for Green belt.

4. Land

The study area covers 314 km^2. In that context the likely change in land use and land cover due to the project is likely to be in the order of 0.01-0.02% of the entire area, a relatively modest figure. Also as per the environmental risk categorization it comes under moderate risk level where the activity can operate subject to management and or modification.

Impacts

Potential Impacts on the Land Use and land cover shall be due to the project are given below:

- With reference to Drainage map of land, there are many small streams and natural drains near the plant. There is a chance of that water bodies gets polluted if the effluent from the plant is discharged into the drains.
- The surrounding land use may get affected due to solid waste, if it is not disposed properly. The soil and the ground water can get polluted.
- Site preparation
- Green belt development (Positive Impact)

Mitigation measures to reduce Land Use and land cover related impacts are:

- Optimization of land requirement through proper site lay out design will be a basic criteria at the design phase;
- As the Site is surrounded by Agriculture land as LU map suggest so care should be taken for the waste disposal.
- The management of the proposed plant should implement the proper disposal method for solid and hazardous waste. The waste should not be dumped on open ground without liners.
- Development and maintenance of green belt within project premises, a positive impact is envisaged.

5. Soil

Impacts

Potential impacts on soil due to production of sugar and co-generation activities are given below:

- Impacts during construction phase
- Impacts during operation phase.

Mitigation measures to reduce soil related impacts are:

- Construction activity is limited. Effect is limited to factory area only.
- Fertile soil will be stacked and used in landscaping.
- The drainage plan will be implemented.
- Fly ash, press mud and spent wash will be sale to authorized vendor for disposal.
- Waste water will be treated in ETP.
- Waste water will be channelized.
- Reduce erosion.
- Silt trap will be installed to prevent siltation.
- The lagoons have been made by concrete with adequate size to prevent over flow. Thin layer lining will be done over concrete walls of lagoons to prevent percolation.

6. Socio-Economic

Critical analysis of socio-economic profile of the area vis-à-vis its scenario with proposed project activities indicate that the impacts of the project are expected to be of varying nature.

Impacts

The impacts predicted will be on following Environmental components:

- Population
- Education
- Employment Generation
- Infrastructure
- Sanitation/Public Health
- Agriculture**:**

Mitigation measures for Socio Economic:

- Construction and maintenance of the approach road at regular interval will be carried out by the project proponent.
- Developed water management and adoption of Soil and Water conservation methods with recharge the groundwater. Improving organic farming practices by providing agriculture technology in some of the villages in 10 km radius area. To solve the sanitation problems by sock pits, covered drains and construction of toilets and solid west management.
- To stop the migration by start the income generation activities and employment

opportunity, job opportunities will be created in the project area from industrial sector, Creation of employment opportunity in the areas.

- The sugar factory should have strict vigilance on pollution control systems to ensure strict compliance with laws.
- Full proof arrangements to be made by the factory to keep pollution under check.
- People will not migrate to city or urban area in search of employment / livelihood. 998 village youth (Skilled and unskilled worker) will get the employment opportunities.
- Industry to ensure immediate action to stop contamination so that ground water is not polluted.

7. Occupational Health & Safety

Impacts on Occupational Health, Community Health and Safety listed below:

- Impact during preparation of site development which is Risk of occupational injuries.
- Impact on community health due to various transportation activities, like Noise pollution, Dust pollution, potential damages to village road. Due to this lot of inconvenience may happen to local community.
- Occupational risk during working at heights, during welding etc for Construction activity.
- During storage, handling and disposal of waste water, Risk to community health due to spillage in surrounding area if not stored properly.
- Risk during manufacturing process.
- Risk due to Fire for all type of storages.

Mitigation Measures:

- By using PPEs during process impacts on occupational health and safety shall be overcome.
- Occupational health and Safety surveillance program will be carried out
- Continuous CSR activities shall be there by proponent such as construction of approach roads, various awareness programs
- By proper Risk Assessment and risk management of process.

Chapter No. 5: Analysis of Alternatives

Site selection

The existing technology used by M/s VSSSKL, Solapur for Manufacturing of sugar, co-gen & alcohol is one of the best and proven technologies; hence no alternative technology has been analyzed.

Technology Process:

Sugar Process:

The existing technology used by M/s VSSSKL to make 8500 TCD capacity which is modernized & balanced to total 11000 TCD capacity with best technologies available.

1. Improvement in crushing capacity & its utilization with updating of Technologies.
2. Improvement with milling performance by maintaining the machineries & its components.
3. Reduction in energy consumption by adopting modern energy saving techniques.
4. Optimum use of steam.
5. Reduction in final molasses purity.

Co gen Process:

The high pressure co-generation plant is selected to utilize bagasse as non-conventional fuel. The new co-generation power plant will replace the existing low pressure boiler and turbo generator. It is an efficient and cost effective to save energy and reduce pollution. There is no addition of equipment at 49 MW capacities of cogeneration project. This will be run at full capacity.

Distillery:

The existing distillery plant is already having the 60 KLPD continuous fermentation system & multi-pressure distillation system. Now the proponent has decided to install the new 90 KLPD distillery with,

1. Continuous fermentation/ Fed Batch System.
2. Multi-pressure distillation system to produce RS, ENA & for fuel ethanol.
3. Molecular sieve dehydration technology shall be adopted.
4. Stand alone evaporation system has been incorporated as primary & secondary treatment system

Chapter 6: Environmental Monitoring Program

An environmental monitoring plan provides a delivery mechanism to address the adverse environmental impacts of a project during its execution, to enhance project benefits, and to introduce standards of good practice to be adopted for the project works. An environmental monitoring program is important as it provides useful information of the project.

Objective of monitoring:

1. To measure effectiveness of operating procedure.
2. To confirm statutory & mandatory compliance.
3. Identify unexpected change.

Environmental Monitoring:

The following will be monitored on a regular basis during operation phase and also throughout the life of the project to ensure that a high level of environmental performance is maintained:

- Periodic monitoring of $PM_{10,}$ $PM_{2.5}$, SO_2 and NO_X will be carried out during the operational phase.
- Post project sampling and effect on baseline data generated during preparation of EIA report
- The general effectiveness of pollution control measures shall also be monitored.
- Online monitoring is also working in the factory. As per CPCB guidelines.

Chapter 7: Additional Studies

Hazard Identification and Consequence Assessment

Identification of hazards in the proposed plant is of primary significance in the analysis, Quantification and cost effective control of accidents involving chemicals and process. A classical definition of hazard states that hazard is in fact the characteristic of system/plant/process that presents potential for an accident.

Planning:

On-site and Offsite emergency plan will be prepared as per the factory act and will be prepared as per Rule no. 12 of factory act (control of Industrial Major Accident Hazard Rules, 2003) as per the guidelines given in Schedule 6. It is absolutely necessary to train carryout mock drills for success of emergency plan during actual emergency. Emergency procedures should be laid down clearly and convincingly to everyone on site.

Public consultation:

Details of Public consultation will be incorporated after conducting Public hearing for the project as guided by MPCB and their suggestions will be incorporated in operation of the plant and CSR activities.

Chapter 8: Project benefit

The proposed project on implementation will generate potential jobs directly, and will also generate many indirect job opportunities.

1. Indirect and direct employment opportunities to local people in contractual works like housing Construction, transportations, sanitation, for supply of goods and services to the project and other community services.
2. The production of sugar, alcohol which lead the state higher level.
3. Market and business establishment facilities will be also increase also Cultural, recreation and aesthetic facilities will be improved.
4. Improvement in communication, transport, education, community development and medical facility.
5. The activities would result in an increase in local skill levels through exposure to proposed technology.

Chapter No. 9: Environment Management Plan

The EMP provides a delivery mechanism to address potential adverse impacts, to instruct contractors and to introduce standards of good practice to be adopted for all project works. For each stage of the program, the EMP lists all the requirements to ensure effective mitigation of significant biophysical and socio-economic impacts identified in the EIA.

- Energy and water conservation practices will be adopted.
- Green belt development plan is designed for project over 3,44,024 sqm with variety of plants.
- Total rainwater generated and harvested through built-up and open area, and green belts from the project area is about **89469974.1 m^3.** The rainwater recharge through recharge structures like settling ponds, pits etc.

CSR Activity

The VSSSKL has already adopted a policy for Environment protection and comprises following aspects:

- Provide, maintain and upgrade facilities, operations and working conditions pollution free for all employees, visitors, contractors, public and surroundings.
- Protect the environment and encourage employees to adopt practices for maintaining good health and safe working procedures.
- Operate business in an environmentally and socially responsible manner.
- Integrate environment aspects in planning of operations.
- Encourage and adopt measures for continuous improvement of Environmental parameters.
- Provide necessary information and training to all, for continual improvement and protection of environment.

Chapter 10: Conclusion

M/s. Vitthalrao Shinde SSKL proposed project is not going to affect the surrounding environment as this project will adopt the latest technology. Further, it will generate a fair amount of direct, indirect and induced employment in the region. The local economy will receive a boost due to employee spending and services generated by the company. All the possible environmental aspects are adequately assessed and necessary control measures are formulated to meet with statutory requirements. Due to the implementation of the project activity there shall be improvement in the standard of living viz. better education, improved health, sanitation facilities etc. This is envisaged as a major positive benefit. The company's management shall recruit semi skilled and unskilled workers from the nearby villages due to availability of local labors. The employment provided due to the proposed project would rapidly increase the social status of the villagers. Thus implementing this project will minimize adverse impacts on surrounding environment. Hence proposed project will be a welcome development.

Chapter 11: Executive Summary

Executive Summary is incorporated in this Chapter.

Chapter 12: Disclosure of Consultant

The project proponents retained sd engineering services pvt. ltd. as consultant to prepare EIA report for VSSSKL. The consultant has more than 16 years of varied experience in the field of environment. The mission of company is to provide sustainable solutions on "Environment for Development". The company is an accredited EIA Consultant Organization by NABET, Quality Council of India under EIA accreditation scheme as per mandatory requirement of the MOEF, Govt. of India for carrying out Environmental Clearance studies.