Environmental & Social Screening Report

for

Market Yard, Palampur, Kangra District, H.P.

Submitted to

Himachal Pradesh Horticulture Development Project

Shimla

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Sub-Project Description

Government of Himachal Pradesh (GOHP) with support of World Bank and in association with Himachal Pradesh State Agricultural Marketing Board (HPSAMB) is implementing Himachal Pradesh Horticulture development Project (HPHDP), where the present sub project, the expansion and refurbishment of **Market yard, Palampur, Kangra** is under progress. With agriculture being the major sector, and with around 75% of population being in to farming, the need for market yards is continually increasing Palampur. The continual increase in agri and horticultural produce, growing purchase power of the customer, expanding tourism sector in the region will also vitally necessitate market yard in Palampur to expand the facility and reduce potential post-harvest losses.

The existing Palampur market yard is located in an area of 3737 sq. m and is well connected to road transport system as it is adjacent to SH-17 enhancing the ease of the produce to be transported to the market yard from surrounding districts. A variety of infrastructure facilities such as shops, office, canteen, parking space, auction platform etc. exist at the market yard. However, an upgradation of majority of infrastructure facilities within the project site, like refurbishment of auction hall, inclusion of exclusive area and equipment for waste management, establishment of drainage, rainwater harvesting facilities, renovation of yard lightening, drinking water supply, provision of new toilets, parking lot and fencing etc., are proposed under expansion and up gradation of the proposed Palampur Market Yard. In this regard, the screening of environmental and social components associated with the existing market was carried out and accordingly the analyses of expected impacts on Socio-environmental components and suggestible mitigation measures have been reported as here under.

The total water to be utilized following proposed up gradation of the sub-project along with the existing facility is estimated to be about 6 KLD. The wastewater generated in the yard is principally with characters of domestic waste water and hence will be treated in a portable sewage treatment plant which is proposed to be established in the present market yard for expansion. Currently about 2 ton/day of solid waste is generated from the facility. Consequentially, 2 km of study area is identified all around the project site to collect the baseline data for air, water, soil, noise, ecological and social conditions etc., and the environmental impacts expected to be identified for the project are also reported within the study area.

Site Selection Criteria:

The proposed site at Palampur (V), Kangra (T), Kangra (D) with an area of 3737 sq.m. is proposed for market yard facility to handle the sale of apple and other fruits and vegetables. The site co-ordinates are – 32° 6’ 39.39” N 76° 32’ 23.14” E.

The enviornmental site assessment was carried out by considering the parameters like topography, hydrology, geology, ecological or sensitive areas, transport system and habitation keeping in view of the site infra available. The available guidelines and notifications from Ministry of Environment and Forest, and HP Town & Country Planning Rules were refered to identify the suitability of the site.

The site assessment reveals that there are no water bodies in the vicinity, except one underground

natural drain. **Hence, the project site is suitable for establishing the proposed Market Yard.**

A detailed Environmental Site Assessment has been carried out and given in the tabular form below. The maps related site are given below.

- **Environmental Site Assessment**

Description: Site (existing market yard facility) at Palampur town, Palampur tehsil, Kangra district, HP. (Location geo-coordinates: Latitude 32° 6′ 39.39″ N & Longitude: 76° 32′ 23.14″ E)

S.no	Criteria	Sub-criteria	Evaluation[*1] (with relative classes)	Site characters, environmental conditions, resources and others & evaluation class & justification
1	**Topography**	**Slope**	Class-A: More than 45° angle Class-B: Between 25 to 45° Class-C: Less than 25°	Class-C (Good)
1	**Hydrology**	**River/lake**	Class-A: Less than 200 m distance Class-B: Between 200 to 300 m Class-C: More than 300 m	• Class-C (Good) • Biral khad is 320 m (W)
		Floodplain	Class-A: Less than 500 m distance Class-B: Between 500 to 700 m Class-C: More than 700 m	Class-C (Good)
2	**Geology**	**Seismic area**	Class-A: Earthquake zone – IV & V Class-B: Earthquake zone – III Class-C: Earthquake zone – II	• Class-A (Poor) • In earthquake zone–V • Although in hazard area, all the civil structures will be designed as per earthquake resistant design of features of new structures and/or strengthen existing structures.
3	**Ecological and/or sensitive areas**	**--**	Class-A: Within protected area and Ecological Sensitive Zone (ESZ). Class-B: Away from ESZ. Class-C: Not within 10 km.	• Class-C (Good) • Dhauladhar WLS is 14 km (E)
4	**Transport system**	**Roadway**	Class-A: National highway (NH), state highway (SH), HPPWDs scheduled road and bye-pass roads <15 m; District road < 10 m; Non-schedule and municipal roads < 3 m. Class-B: National highway (NH), State highway (SH), HPPWDs (Himachal Pradesh Public Works Department) scheduled and bye-pass roads =15 m; District road = 10 m; Non-schedule and Municipal roads = 3 m. Class-C: National highway (NH), state highway (SH), HPPWDs scheduled and bye-pass roads >15 m; District road >10 m; Non-schedule and municipal roads >3 m. Distance is from center line of road.	• Class-A(Poor) • SH-17 (Palampur to Dharmshala road) is adjacent, from facility boundary it is at 0.007 km (S) and 0.028 km (S) from inside main building to road centre. • Village road is 7 m (W) from facility boundary to road centre. • Useful intervention facility, if seen from the perspective of easy of doing business, in terms of accessibility and drive-by, both for vendor (trader) and customer.

5	**Habitation**	**Village/hamlet**	Class-A: Less than 500 m distance Class-B: Between 500 to 600 m Class-C: More than 600 m	• Class-A (Poor) • In Palampur town • Useful intervention facility, if seen from the perspective of easy of doing business, both for vendor (trader) and customer also staff and workers.

Note:-

(i) For *1: Relative classes and grades for evaluation: Class-A (Poor), Class-B (Fair), Class-C (Good)

(ii) Used acronyms of units/abbreviations: m=metre, amsl=above mean sea level; (for direction) N for North, E for East, S for South, W for West, NE for Northeast, NW for Northwest, SE for Southeast and SW for Southwest; HPPWD=Himachal Pradesh Public Works Department of Government of Himachal Pradesh state, India

Evaluation:	Class score:	**Class-A**	**Class-B**	**Class-C**
		3	0	4
Comments:	Overall score	**Good**		

Used references:

(i) Topography, the slope angle limit is, as per document of Himachal Pradesh Town and Country Planning Rules-201 Revised 2016, of Urban Development Department, Government of Himachal Pradesh state, India. http://ud-hp.in/pdf/tcp_plans_2014.pdf.

(ii)(a)Floodplain setback distance is, as per Environmental Guidelines for Industries of MOEFCC. http://www.moef.gov.in/citizen/specinfo/enguin.html.
Notification, Rajpatra-TCPF(5)-1/2017, Himachal Pradesh, year 2017, setback distance from river is high flood level+25 metres. http://rajpatrahimachal.nic.in/OPENFILE1.aspx?ID=%20105/GAZETTE/2017-21/08/2017%20&etype=SPECIAL.
(b) Setback distance of structures from road, as per Himachal Pradesh Town and Country Planning Rules–2014 Amended 2016, under section of, regulations for development of apartments and colonies, of Urban Development Department, Government of Himachal Pradesh state, India. http://ud-hp.in/pdf/tcp_plans_2014.pdf.
(c) Setback distance of structures from road, as per Draft Development Plan of Shimla city of Shimla district in Himachal Pradesh state for apartments regulations, for city roads is 7 metres and non-schedule roads and municipal roads is 3 metres. http://tcp.hp.gov.in/Application//uploadDocuments/devlopmentPlan/PlanDoc020150127_173301.pdf

(iii) Seismic area, earthquake hazard map of Himachal Pradesh, Himachal Pradesh State Disaster Management Authority. https://hpsdma.nic.in//admnis/admin/showimg.aspx?ID=1225.

(iv) Ecological and/or sensitive areas: siting guidelines for industries, MOEFCC (Ministry of Environment, Forest and Climate Change, Government of India).

(v)Habitation distance, as per Manual of Swachh Bharat Mission of National Institute of Urban Affairs, Ministry of Urban Development, Government of India. https://smartnet.niua.org/sites/default/files/resources/Book2.pdf.

Environmental Screening and Classification

(A) Impact Identification

Has sub-project a tangible impact on the environment?	A systematic flow of fruits and vegetables from farm gate to the consumer is a vital component of national or state food security. The flow of fruits and vegetables are generated upstream in growing areas and gathered in market yards and sub yards. The major horticultural produce traded in the market yard at Palampur includes potato, peas, capsicum, cabbage, cauliflower. The market yard serves the population of around 3000 to 4000 (approximately) with around 60 commissioner employees. It consists of basic amenities prerequisite for market yard operations such as shops, office, canteen, parking space, auction platform etc. The total number of daily visitors to market comprise of 150-200 people (estimated average) for the business. Approximately 40 vehicles travel across the market yard, which include all types of vehicles, every day to transport the produce with average sales volume of 5000 kg per week per commissioner. Consequently operations at the market yard premises generate about 2 ton of solid waste per day principally comprising of fruit and vegetable waste and minor quantity of paper, carton and plastic disturbing the environment. The organic waste (Fruit and vegetable waste) produced in markets generate odor with in the premises as well as during further waste management practices, due to the high moisture content. The solid waste generated at the premises consists of organic and inorganic waste material. Recyclable solid wastes such as plastic, paper, cardboard etc. are recycled and reused within the sub-project area. Organic waste generated at market yards provides great opportunity to be reutilized as value added products such as compost, fuel brickets etc., in various industries owing to its organic combustible fraction. It can as well be processed by compositing or anaerobic treatment technologies or by organic waste converter to generate compost, biogas and reutilize it as an alternative fuel. The inorganic material will be disposed of in low lying landfill sites of suitable nature. Furthermore, as referred earlier, the produce reaches the market yard through vehicles ranging from large trucks to autos. Improperly maintained vehicular conditions and unorganized vehicular movement within the premises also initiate air and noise pollution. Properly organized vehicular movements would abate potential pollution levels in the premises. Laterally the waste water at the market yards is majorly generated due

	to sanitary activities or from domestic activities and from canteen/office. An appropriate portable sewage treatment plant will be installed to treat waste water and to ensure that specified parameters are meeting the regulatory standards To facilitate environmental safety and abate pollution with in the premises, an environmental management plan with appropriate sustainable technologies or strategies will be implemented. This will ensure that the environmental impacts due to market yards are minimized to an acceptable level. Correspondingly, the sub-project does not indicate any tangible impacts on the surrounding environment.
What are the significant beneficial and adverse environmental effects of the sub- project?	The anticipated environmental impacts include minor impacts through: • Air pollution • Water pollution • Solid waste generation • Noise pollution • Soil pollution • Floral and faunal disturbance Air emissions in market yards are mainly generated through vehicular movement or through construction activities. Flue gases are also emitted from DG operations. Accordingly, the emissions can be greatly abated by constructing concreted or asphalt roads and by maintaining them in proper conditions throughout. Ensure that the vehicles are properly maintained and vehicular movement is well organized to prevent any vehicular movement blockages. The waste water from the market yard activities may mainly consist of elevated levels of BOD, COD, TDS, TSS and hence, the waste water thus generated is treated in an appropriate portable sewage treatment plant to minimize any potential environmental impact. The solid waste from the market yard mainly consists of spoiled fruit and vegetable waste that have the potential for co-product exploitation. The valorization of fruit and vegetable waste is possible through extraction of high value components such as proteins, polysaccharides, dietary fibers, and phytochemicals. The recovered by-products or biomolecules can be used in food processing or pharmaceutical or medicinal preparations. The solid waste can be further treated to produce compost which can be used as manure. Odor is also a significant nuisance within the market yards and it can be controlled by maintaining proper air flow control or negative air pressure, either through innovative design interventions, or installing odor control equipment like whirlybird or turbo ventilators, mist air dry fog odor suppression system etc.

	The up-gradation and expansion of market yard at Palampur will increase the operational efficiency. The approach and the methods adopted during the construction and operational phases of the proposed sub-project are however predicted to create certain environmental disorders/fluxes that could be well mitigated through embracing a proper management plan. Substantial mitigation measures to abate environmental instabilities have been proposed, and are discussed in the following sections and also in Environmental and Social Impact Assessment (ESIA) report.
Does the sub-project have any significant potential impact on the local communities?	The proposed up-gradation and expansion of market yard at Palampur would develop and rationalize market operations and improve market management system. Concurrently, the market yard is aspired to benefit local environment as well. The existing market yard was found to have constrained sanitary and hygiene situations, unorganized sewerage and sanitation system, insufficient waste management, that cause a serious concern to the surrounding environment. However, the expansion facilities proposed will improve the public health through better sanitary conditions on site and, enhancing solid waste disposal facilities which reduce potential negative impacts on the surrounding environment. The expansion is also predicted to increase operational activities at the market yard, professionalize the management system, and increase the transparency within market operations there by encouraging more producers to get their produce to the market from surrounding locations. Aligned with increased operational frequency at the market, it is expected to be similar for vehicular movement that might lead to increased traffic, road congestion, air and noise pollutions in the region. Also, following the population influx into the region, there is a possibility of spread of certain communicable diseases if proper care is not taken. By adopting proposed environmental management plan, it is possible to stabilize any unwanted potential impacts on the surrounding environment. As the operations increase, there would be a greater demand for manpower that would enhance employment opportunities to local people. This would subsequently increase purchase power of the local community in surroundings there by paving a route for more business development, increased job creation and economic development of the region. This would also encourage government to construct better social infrastructure such as hospitals, schools, government offices etc. Hence, the proposed sub-project is anticipated to have positive impacts on the surrounding environment.
What impact has the sub-project on the human health?	The work force at the market yard is mainly involved into manual activities such as lifting, transferring produce from vehicle to interior of the yard and vice-versa, which involves repetitive motions, awkward postures etc. These activities can result in soft tissue injuries and

	musculoskeletal disorders creating both short term and long term injuries to the personnel involved. To sub side the negative effects, proper ergonomic postures' information, work place facilities and tools will be provided to the personnel. The sub-project mainly results in dust emission, noise creation, and solid waste generation at the premises due to operational activities which would have an impact on the workers involved. To recede the same, best management practices will be adopted at the operations level and this will drastically reduce the potential negative impacts on health. Furthermore, the staff will be provided with personal protective equipment such as face mask and eye protective equipment, to safe guard their health from the exposure to pollutant parameters. Also, the rules and regulations will be in place making sure that the personnel get enough rests or breaks during the work and in between the working hours or days eliminating any potential negative health impacts. The sub-project would also have a positive impact on health of local communities due to adoption of best management practices and best available technology not entailing excessive cost as this would negate any negative environmental damages that could have affected the local community health.

(B) Impact Mitigation

What alternatives to the sub-project design have been considered and what mitigation measures are proposed?	Sub-project design of market yard holds alternative marketing strategies such as contract farming, direct marketing, farmer's produce organizations, group marketing etc. The sub project of upgrading and expansion market yard provides an opportunity to source some of the key areas that can enhance environmental safety at the market yard premises; • Value added products from fruit and vegetable waste • Improved waste treatment facilities at the premises • Superior supply chain management and operations Accordingly, by adopting best management practices and best technologies, there exists an option to control environmental pollution while benefitting the investor. Best management practices (BMP) and Best available technologies not entailing external costs (BATNEEC) will be implemented wherever possible within the market yard, to minimize the pollution levels and carry out the operations at an appropriate scale, which results in gains compared to investments made. This practice enables least possible harm to environment through integrating sustainability considerations as a

	natural part of performance management as well as to create substantial balance between economic cost and environmental costs to the investor. Furthermore, the practices will create awareness and engage all the stake holders into sustainable management practices. **Mitigation measures proposed** • Appropriate mitigation measures for control of air, water & noise pollution and solid waste management are discussed in detail in the following sections and also detailed in ESIA report. • The workers are to be provided with necessary Personal Protective Equipment (PPE) while working in facilities and periodic health check-ups for the workers and local communities • Project execution team needs to be educated and aware about rights and duties of direct workers and contract workers. • Skill gap analysis is suggested to design capacity building programmes and to create employment opportunities to the local people based on priority, educational qualification and skill set. • Provision of infrastructural facilities for workers' sanitation, health, hygiene and recreation is suggested • Sewerage and storm water drainage systems to be provided based on maximum rainfall and to be maintained properly with regular checks for smooth flow of water • Training programs for workers at different levels on efficient handling of waste, safety at work, gender mainstreaming, child labor and rights of indigenous people & livelihoods, are suggested.
Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in sub-project preparation?	Extensive stakeholder dialogues were conducted through different social tools like Focused Group Discussions (FGDs); participatory rural appraisal covering local farmers, workers, staff, self-help groups, community based organizations, NGOs and cooperative societies.

(C) Categorization and Conclusion

Conclusion of the environmental screening:

- ✓ Sub-project is declined □
- ✓ Sub-project is accepted ■

- ✓ Sub-project is classified as environmental Category B and needs EMP ■

- ✓ Sub-project is classified as environmental Category C and does not need EMP □

Social Screening

Social safeguards screening information		Yes	No
1	Is the information related to the affiliation, ownership and land use status of the sub-project site available and verifiable? (The screening cannot be completed until this is available)	Yes	
2	Will the sub-project reduce people's access to their economic resources, such as land, pasture, water, public services, sites of common public use or other resources that they depend on?		No
3	Will the sub-project result in resettlement of individuals or families or require the acquisition of land (public or private, temporarily or permanently) for its development?		No
4	Will the sub-project result in the temporary or permanent loss of crops, fruit trees and household infrastructure (such as ancillary facilities, fence, canal, granaries, outside toilets and kitchens, etc.)?		No
If answer to any above question (except question 1) is "Yes", then OP/BP 4.12 Involuntary Resettlement is applicable and mitigation measures should follow this OP/BP 4.12 and the **Resettlement Policy Framework**			
Cultural resources safeguard screening information		**Yes**	**No**
5	Will the sub-project be implemented in the vicinity of a cultural heritage site?		No
6	Will the sub-project require excavation near any historical, archaeological or cultural heritage site?		No
If answer to question 5 is "yes", then **OP/ BP 4.11 Physical Cultural Resources** is applicable. In this case, sub-project proponent must provide evidence that consultation was held with and an agreement on this sub- project was obtained from an authorized representative of culture and heritage protection authority. If answer to question 6 is "Yes", then **OP/BP 4.11 Physical Cultural Resources** is applicable and possible chance finds must be handled in accordance with OP/BP and relevant procedures provided in this EMF.			

Environmental Management Plan

Part A: General Project and Site Information

Institutional & Administrative			
Project title	Conducting ESIA studies and preparation of ESMP for moderate to high risk activities under - HPHDP		
Sub-Project title	Environmental & Social Impact Assessment Report for Palampur Market Yard, Kangra District, Himachal Pradesh		
Scope of site-specific activity	• Commission field visit based socio-economic and environmental survey to determine the project interventions requiring ESIA & propose necessary ESMP • Perform an extensive stakeholder and community engagement practice to source current state of social conditions in the project site, rank key issues as well as to suggest required measures to address concern of stake holders through social impact assessment • Assessing current state of environmental and socio-economic conditions of the project site area • Undertake an alternative evaluation process to avoid and /or minimize any potential high risk impacts to ensure protection to environment • Identifying needs or existing gaps in the socio economic conditions of the project Prepare an intervention specific socio economic baseline survey report • Suggest to enrich work place facilities as well as the qualities such as sanitation, transportation, recreation and to safeguard the employee welfare • Suggest necessary capacity building and awareness as per identified needs • Create awareness within the man power about work place policies, employ facilities, employ safety, gender equality and generate employee opportunities for local and indigenous people		
Institutional arrangements	Task Team Leader: HPHDP	Safeguards Specialist: HPHDP	
Implementation arrangements (Borrower)	Implementing entity: HPHDP	Works supervisor: PCU- HPHDP, PIU-HPSAMB	Works contractor: RESPL
Site Description			
Who owns the building to be constructed/ extended/reconstructed?	Agricultural Produce Market Committee (APMC, Kangra)		

Who owns the land allocated for sub-project? Who uses the land (formal/informal)?	Agricultural Produce Market Committee (APMC, Kangra) Farmers organizations, Societies and Private Entrepreneurs
Description of physical and natural environment, and of the socio-economic context around the site	The principal physical features of the proposed project site; • Location : Palampur (V), Palampur (T), Kangra (D) • Geographical co-ordinate : 32° 6' 39.39" N 76° 32' 23.14" E • Elevation : 1260 m • Total land area : 3737 sqm • Nearest highway : SH-17, Adjacent • Nearest water body : Bhiral khad, 0.32 km (W) • Nearest Village: Palampur (within the village) The base lines studies in the villages within 0-2 Km radius from the project site depicted socio-economic conditions around the proposed project, as per 2011 census reveals that the study area consists of 18,370 inhabitants of who around 9276 accounted for male and 9094 female populations. Average literacy rate is observed as 83%. The average household size was 4 of total number of households at 4575. This reveals a nuclear family pattern with in the studied area.
Which of the project intervention sites does sub-project related to and how?	The project is related to Palampur Market Yard, Kangra District, Himachal Pradesh.
Legislation	
National & local legislation & permits that apply to sub-project activity	The sub-project is required to comply with the relevant Laws and Regulations of the State Pollution Control Board.
Public Consultation	
When / where the public consultation process took / will take place	Extensive public consultations were conducted in the project area and nearby villages through FGDs, participatory rural appraisal techniques. These consultations covered issues of local farmers, women, migrant workers, staff, community based organizations, NGOs, cooperative societies.
Attachments	
Attachment 1	Eco sensitive map

Environmental /Social Screening			
Will the site activity include/involve any of the following?	**Activity/Issue**	**Status**	**Triggered Actions**
	A. Building rehabilitation	[✓] Yes [ ] No	See Section **A** below
	B. New construction	[✓] Yes [ ] No	See Section **A** below
	C. Individual wastewater treatment system	[✓] Yes [ ] No	See Section **B** below
	D. Historic building(s) and districts	[ ] Yes [✓] No	See Section **C** below
	E. Acquisition of land	[ ] Yes [✓] No	See Section **D** below
	F. Hazardous or toxic materials	[ ] Yes [✓] No	See Section **E** below
	G. Impacts on forests and/or protected areas	[ ] Yes [✓] No	See Section **F** below
	H. Handling/management of medical waste	[ ] Yes [✓] No	See Section **G** below
	I. Traffic and Pedestrian Safety	[✓] Yes [ ] No	See Section **H** below
	j. Renewable energy	[✓] Yes [ ] No	See Section **I** below

Activity	Parameter	Mitigation measures checklist
0. General Conditions	Notification and Worker Safety	**Notification** **Shop and up-gradation and expansion act** The act has the responsibility of protecting both rights of employers and employees covering various aspects but not limiting to lighting and ventilation, fire safety and precautions, accidents, record keeping etc. **Worker safety for employers** • Employers are entitled to acquaint the staff with the significance and usage of PPE through training or orientations etc. • Employers have duties concerning the provision and assuring the staff of exercising the personal protective equipment (PPE) usage while at work. • Maintain workplace area in clean, orderly manner with sufficient infrastructure and facilities ensuring the worker safety **Worker safety for employees** • Realize the prominence of work place safety, attend all safety training from employer and adhere to the safety instructions
A. General Rehabilitation and/or Construction Activities	Air Quality	**Pre-construction and construction phase** Most of the dust during construction will be generated due to the movement of construction vehicles on unpaved roads within site. Unloading and removal of soil, construction material etc. acts as the potential source for dust nuisance. The control measures proposed to be taken up are given below • Water sprinkling will be carried out twice a day over main concrete/asphalt roads of the project area, as this process will reduce dust emissions significantly. Frequency is increased during windy

		days. • The duration of stockpiling of excavated soil will be kept as short as possible and will be covered to avoid dispersion of dust due to wind and rain. Most of the excavated soil will be used as backfill material for the open cut trenches for road development and for gardening & plantation purpose in and around the site. • Temporary thin sheets of sufficient height (3m) will be erected around the site of dust generation or all around the project site as barrier for dust control. • Tree plantations around the project boundary will be taken up (where ever required) at the early stages of project construction, by planting of 2 to 3 years old saplings and irrigating through drip or by regular watering so that the area will be moist for most part of the day. • Flue gases are emitted from DG set operations and fuel burning, which may be only for temporary period during construction day. • All vehicles carrying raw materials & construction material will have to be covered with tarpaulin/plastic sheet and loading and unloading activity will be stopped during windy days. • To reduce the dust movement from civil construction site to the neighbourhood, the external part of the building will be covered by plastic sheets. • Loading and unloading activities of the raw material will be passive during windy days. • A planned schedule is kept in place to minimize/control vehicular movement within the premises. • Drivers will be instructed to turn off the engines to abate potential air emissions, rather than allowing them to run for longer periods. **Operational phase** • High quality, silent DG sets with inbuilt stack have to be used as power back up to minimize noise and mitigate emissions. • Concreted/asphalted roads will be constructed and maintained to control dust emissions. • LPG is proposed as an alternative vehicular fuel entering the market yard to abate vehicular emissions. • Drivers will be mandated to turn off the engines rather than allowing them to run for longer

		periods as and when required. • Mandatory PUC certification for the vehicle entering the premises will be in place. • Sweeping machines and sweeping process will be carried out frequently within the premises to reduce particulate matter **Odor:** • Proper air flow control or negative air pressure within the yard either through innovative design interventions, or installing odor control equipment's will be maintained to abate odor • Fruit and vegetable waste dump area will be delineated from the main activity area so as to eliminate potential public exposure to odor • Odor control equipment as mist air dry fog odor suppression systems or atomizers can be installed at odor generation source • Neutralizers such as sodium hypochlorite, potassium permanganate or commercial preparations as Ecosorb can be applied to control odor nuisance
	Noise	**Pre-construction and construction phase** • Drivers carrying the raw material will be made aware of the negative impacts of noise pollution through sign boards at the premises • Drivers will be instructed to turn off the engines and not run them for longer periods of time • Noise generating equipment will be exercised only during the day time or early afternoon rather than during early morning or late afternoon • Proper enclosures will be used for reduction in noise levels, where ever possible, the noise generating equipment will be kept away from the human habitation. • All the vehicles entering the premises will be travelling at optimal speed to reduce potential blowing of horns • Temporary thin sheets of appropriate height will be erected around the site to control noise propagation into the surrounding areas • Noise generating equipment will be maintained and serviced properly to abate potential noise

		Operational phase • Drivers carrying the fruits and vegetables will be made aware of the negative impacts of noise pollution through sign boards at the premises or as a part of occasional training • The maximum permissible sound level for new diesel generator (DG) sets, that are proposed at the market yard, shall be within 75 dB(A) and will be placed 1 m away from the enclosure • Acoustic enclosures, noise barriers or shields will be provided as required, for DG set, pumps etc., and wherever possible they will be mounted on anti-vibration pads to minimize the noise. • Regular maintenance will be carried out as per the schedule prescribed by the manufacturer for smooth functioning.
	Water Quality	**Pre-construction and construction phase** • The total water required for construction is about 4 KLD and is sourced from tap water. • The raw water collected is used for construction activities. **Operational phase** • The total water requirement is about 6 KLD and the source is tap water. • Water used for domestic activities should meet IS 10500:2012 drinking water standards and water quality criteria as per CPCB updated on 11 September, 2017. • The treated wastewater can be reused for floor washing, fruit and vegetable washing, vehicle washing, greenbelt etc. • The rooftop runoff can be used for ground water recharge through recharge pits.
	Waste management	**Pre-construction and construction phase** • Waste produced from the construction activities within the facility area of 3737 sqm will be regularly collected in bins and kept in a storage area and protected with proper sheets to prevent any potential waste scatter. • A designated waste storage area with sufficient waste storage facility will be maintained on site. • Attempts will be made to keep the waste segregated into different heaps kept separately at kept distantly within site as far as possible so that their further gradation and reuse and/or treatment

		and disposal is facilitated. • Materials, which can be reused for purpose of construction, leveling and making roads/ pavement will also be kept in separate heaps from those which are to be sold or land filled. • Construction waste generated will be deposited at collection center made by local body or handed over to the authorized processing facilities for construction and demolition waste. • Construction activities may generate some quantity of muck, which is managed by mixing it with straw, stone dust or rice husk, to reduce the adverse impacts. **Operation phase** • Fruit and vegetable waste and other solid wastes of about 2 ton/day will be generated from the market yard, collected in bins and segregated into different heaps such as biodegradable, non-biodegradable, recyclables etc. • The rejected fruits and vegetables, peels, cuttings, inner cores/seeds will be collected and sold for reuse as cattle feed. • Alternatively, general wastes and compostable fruit and vegetable wastes can be sent for vermicomposting process or for Organic Waste Converter (OWC), and the manure generated can be sold to farmers or to local markets to generate extra revenue.
B. Individual wastewater treatment system	Waste Water Quality	**Construction phase** • During site development, necessary precautions will be taken so that the runoff water from the site gets collected to working pit and if any over flow is there, it will be diverted to nearby greenbelt / plantation area. • During construction activity all the equipment wash water will be diverted to working pit to arrest the suspended solids if any, and the settled water will be reused for construction purposes and for sprinkling on roads to control the dust emission, etc. The construction workers will be using the toilets of the existing facility or temporary toilets. **Operational phase** • The waste water generated from domestic and other activities will be collected and diverted to a portable STP and the treated water will be reused for floor wash, vehicle wash, greenbelt and

		sanitary activities.
C. Historic building	Cultural Heritage	No historical buildings representing cultural heritage are present within 2km radius of study area.
D. Acquisition of land	Land Acquisition Plan/Framework	The land acquisition activities are the responsibilities of HPSAMB for this sub-project.
E. Toxic Materials	Toxic / hazardous waste management	All the project processing activities are mainly involved in auctioning and the waste mainly is organic in nature. There are no toxic components or materials involved in market yard operations proposed in Palampur market yard. Hence, there will not be any toxic materials arising out of this project.
F. Affected forests, wetlands and/or protected areas	Protection	The proposed project does not encompass any forest lands, wetlands or protected area. But few water bodies like Bhiral Khad 0.32 km W, Maul Khad 1.08 km S, Nyugal Khad 1.67 km NW are located in the study area. All necessary mitigation measures will be implemented as per environmental management plan. The proposed project does not envisage any tree cutting and moreover greenbelt development will be carried out as per site specifications. However the project will have a very minimal negative impact on the surrounding flora and fauna.
G. Disposal of medical waste	Infrastructure for medical waste management	Medical waste is usually not envisaged in the facility. Any minor medical waste generated through use of first aid kit due to any injuries during construction or operation activities will be sent to appropriate bio-medical waste handlers as per the Bio-Medical Waste Management Rules, 2016 and its subsequent amendments.
H. Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	Vehicular emissions are the major source of air quality impacts in the study area. The principal cause of air pollution during the construction phase is the diesel-powered vehicles used in haulage of aggregates, earth and other construction material. Gaseous emissions like NO_X, CO and Hydro Carbons might be released from the vehicular movement, which have a direct impact on the environment. Increase in traffic in the study area has a direct and moderate impact on the existing natural environment such as air quality and the ambient noise levels due to release of automobile exhaust and vehicular noise which could be minimized by usage of properly maintained and paved roads, vehicles with PUC certificate and through proper planning for transportation of goods/raw materials for construction and for operations. **Impacts:** ➢ Minor effects on health of nearby residents such as occasional headache, cough and respiratory

		problems etc. ➢ Increased possibility of road accidents due to the speed of the vehicles may be anticipated, which may be checked and kept under control through below mentioned mitigation measures. **Mitigation measures :** ➢ Existing roads have to be repaired, new roads and road intersections, speed breakers, safety sign boards etc. have to be provided. ➢ The construction material should be transported during non-peak hours to avoid heavy traffic. ➢ The construction material must be placed inside the boundary of the facility without causing inconvenience to the pedestrians and to avoid traffic jams. ➢ Only trained and licensed drivers should be allowed to access vehicles used for transport of the materials to project site. However, due to the development of the market yard at Palampur, acute or major increase in number of vehicles that visit the site is not envisaged due to this the traffic is not expected to be increased drastically. This implies that traffic will not have a major impact due to the sub- project.
I. Renewable Energy	Production of green energy for minimization of carbon footprints	Solar grid for rooftops for power generation to supplement partial power requirement and solar street lighting are proposed as they are renewable sources of energy which would decrease carbon footprints contribution through green energy production.

Part D: Monitoring Plan

Potential Impact of sub- project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency/ or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
Air Quality	PM_{10}, $PM_{2.5}$, SO_2, NO_x, and CO	Ambient air quality within the premises of the facility to be monitored.	As per CPCB/ SPCB guidelines and standards.	Every quarter/ once in a month as per CFE/CTO conditions given by SPCB.	The parameters are monitored to observe any deviation with the specified standards and propose the respective control measures to maintain the levels well within the standards.	Site in-charge/ Plant Manager
Noise Quality	Noise levels (day and night equivalents)	Noise levels within the premises of the facility to be monitored.	As per AAQ standards in respect of noise SO 123(E) dt. 14th Feb 2000	Daily till the construction activities are completed/ once in month during operational phase as per CFE/CTO conditions given by SPCB	The noise levels are monitored to observe any deviation with the specified standards and propose the respective control measures to maintain the levels well within the standards.	Site in-charge/ Plant Manager
Water Quality	Respective physico chemical and biological parameters such as	Ground water, surface water within the premises	As per IS - 10500:2012 for ground water	Once in a quarter/ as per CFE/CTO	To monitor, analyze and observe any deviation with the specified	Site in-charge/ Plant Manager

Potential Impact of sub- project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency/ or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
	color, pH, TDS, COD, BOD, *E. coli* etc.	of the facility to be monitored.	and IS 2296 – 1992 for Inland surface water standards	conditions given by SPCB	standards and propose the respective control measures to maintain the levels well within the standards to avoid contamination of ground and surface water.	
Soil Quality	Physico-chemical parameters such as texture, color, NPK, heavy metals etc.	Within the premises of the facility to be monitored.	As per Standard Soil Classification – Indian Council of Agricultural Research, New Delhi	Once in a quarter/ as per CFE/CTO conditions given by SPCB	For maintaining the soil quality in and around the project site and to protect top soil.	Site in-charge/ Plant Manager
Waste Management	Solid waste/ Hazardous waste	Within the facility	As per respective prevailing waste management rules 2016	Once in month / as per CFE/CTO conditions given by SPCB	For reducing the quantity of waste generation, reusing and recycling	Site in-charge/ Plant Manager
Health	All relevant parameters of occupational health such as immunisation, vaccination etc.	Health check-ups for employees within the facility and specially for migrant labour and	Applicable rules of Occupational health and Factories act, 2016	Once in a six months as per CFE/CTO conditions given by SPCB and	Maintaining health and safety at workplace and reducing the risk of exposing to hazard.	Plant Manager / EHS Manager

Potential Impact of sub- project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency/ or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
		women workers		Factories act, 2016		
Social aspects - Workers	Workers, including women, migrant workers and contract workers and child labour (if any)	Migrant workers passbooks to be maintained, employment health records to be maintained. Likewise, physical verification of birth certificates and others to check	Applicable rules of inter-state migration act, child labour prevention act and other applicable labour Laws	Once in a year, before the commencement of season especially.	Protection of project workers - women, migrant workers, contracted workers etc.	Plant Manager / EHS Manager
Community Health	Water-borne, vector-borne diseases, and communicable and non-communicable diseases	Periodic Health camps for workers, truck drivers and local community	As per the applicable labour laws and international standards and social management framework	Once in six months and continuous monitoring of premises and floating population to facility	Anticipate and avoid adverse impacts on the health of workers and communities.	Plant Manager / EHS Manager
Traffic risks	Road safety risks to workers, local	Conducting periodic Road	As per the applicable	Once in an year	Minimize workers and community exposure to	Plant Manager /

Potential Impact of sub- project	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency/ or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
	communities and other road users	safety assessment to monitor and preparation of regular reports	regulations and international standards		project specific traffic risks	EHS Manager