

TABLE ESAP
Environmental and Social Action Plan for the IEFCL-Train2 Project
Indorama Eleme Fertilizer & Chemicals Limited

| Item | Specific Related Impact | Specific Activity /Action | Schedule |
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| Air Quality | The new Fertilizer Project may have impacts on the air quality | - IEFCL will implement a Traffic Management Plan to minimize potential effects on air quality associable to the additional vehicular movements generated by the project. | Within three months of the construction activities started |
| | | - IEFCL will permit only vehicles with pre-mobilization certificates to operate in Project area as to reduce emissions from vehicle exhaust. | Strictly implemented. It will be maintained during the life span of the project |
| | | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will periodically verify stack emissions and air quality levels. On the basis of monitored data, dedicated actions for the safeguard of ambient air quality will be implemented, if necessary. | Air quality monitoring for existing plants already in place. For new Fertilizers plant will be implemented after the start up of the plant. |
| | | - IEFCL will implement a Leak Detection and Repair (LDAR) Program that controls fugitive emissions by regularly monitoring. On the basis of monitoring activities, dedicated actions for the safeguard of ambient air quality will be implemented, if necessary (see Chapter Seven). | 1 month after the start-up of the process plants. |
| | | - Water will be sprayed on construction/ decommissioning sites during dry season to reduce dust levels especially during dry season. | From the opening of site preparation activities. |

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| Health and Safety | The new Fertilizer Project may have an impact on the existent Health and Safety conditions of the host communities/workers interested by the project. | - IEFCL will ensure that demobilization activities are according to regulatory agencies' approved plan (see Chapter Seven, par. 7.1.9) | From the opening of the decommissioning activities |
| | | - IEFCL to ensure that good, and sufficient water supply will be maintained for workers to avoid Waterborne/water-related and water-based diseases. | From the opening of construction activities. |
| | | - IEFCL will ensure that site clinic is provided to take care of minor illnesses for all construction workers. | Already in place |
| | | - Provision of regular pest control and insecticide in residential and office area inside the complex | Already in place |
| | | - Health awareness lectures shall be given to workers on the mode of transmission of STIs (including HIV/AIDS). | At the starting of construction activities. |
| | | - IEFCL will conduct enlightenment campaign and health education for the abatement of abuse of drugs, alcohol among workers throughout the life of the project. Alcohol and drug policy shall be implemented to encourage healthy lifestyle for workers. | After construction is started program will be done regularly |
| | | - IEFCL will ensure that contractor enforces the alcohol and drug policy for their staff | During the plant construction stage of the project. |

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| | | - IEFCL will ensure that there are adequately trained and sufficient numbers of first aiders at each site. | At the starting of construction activities, during construction phase |
| | | - IEFCL will ensure that anti-venom/anti-histamine is provided on site to mitigate snake bites and insect stings. | From the opening of construction activities. |
| | | - IEFCL will implement an Occupational Health and Safety Management Plan, to minimize the risk of potential increase of workplace accidents / diseases (see Chapter Seven), also including a Hazardous Materials Risk Management Plan to minimize the risk deriving from spills of hazardous materials (see Chapter Seven). | Already in place for existing plant. For the new plants 1 month before the starting of the construction activities |
| | | - A quantitative Risk Assessment (QRA) of the whole complex will be implemented to verify that the adopted safeguard measures are consistent with the required high level of protection. | By the end of the project detailed engineering activities. |
| | | - IEFCL will ensure that the regular workshops will be organized to identify, evaluate and recommend contingency plans for all security risks related to safety of personnel and property. | 1 month before the opening of construction activities. During the life span of the project. |

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| Loss of biodiversity | Due to Project, the new stream of workers could stress the wildlife nearby the IEPL/IEFCL Complex. | - Monitoring of the effects of changes in water quality that may influence activities of fishes, benthic organisms etc. shall be undertaken in the projects life cycle, by IEFCL HSE department. | Already in place. It will be done from time to time |
| | | - IEFCL will undertake to educate construction workers and locals on the sensitive nature of the biodiversity of the area and the need for conservation. | From the opening of construction activities. |
| | | - IEFCL will train its personnel by an Environmental Capacity Building Program for minimizing the environmental impact and risks (see Chapter Seven). | From the opening of construction activities in different phases. |
| | | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will verify the characteristics of water discharges and the quality of receiving water body (water and hydrobiology quality) in order to implement dedicated actions, if necessary. | Already in place and maintained during construction and different phases of the Project. |
| | | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will evaluate possible effects of the project on vegetation and wildlife in the area interested by the project and will yearly monitor Hydrobiology parameters in the receiving water body interested by the project. On this basis, if necessary, dedicated actions aimed at minimizing any potential risk in loss of biodiversity will be implemented. | After production started and based on environmental audit guidelines |

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| Noise | Possible noise annoyance associated to the project | <ul style="list-style-type: none"> - IEFCL will develop a dedicated study for the noise impact assessment aimed at ensuring the compliance with regulatory guidelines/standards. If necessary, mitigation measures will be implemented. | By the end of commissioning of the project. |
| | | <ul style="list-style-type: none"> - In accordance to the Monitoring Program (see Chapter Seven), IEFCL will periodically check the project is in compliance with noise standards in order to implement dedicated actions, if necessary. | After 1 month from the opening of construction activities and during the life span of the Project |
| | | <ul style="list-style-type: none"> - IEFCL will alert communities in advance of such activities that are likely to increase noise in the very nearby residential houses. | During the life span of the project, if necessary. |
| | | <ul style="list-style-type: none"> - Transportations activities during night hours will be minimized up to extent possible | Already in place It will be maintained during the life span of the project. |
| | | <ul style="list-style-type: none"> - IEFCL will verify that all vehicles and equipment conform to World Bank limits for noise. | From the opening of construction activities. During the life span of the project. |

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| Environmental risks | The Fertilizer project may increase the risk of spills of hazardous materials and waste, thus causing soil and ground water pollution. | - IEFCL will ensure that a controlled fuelling, maintenance and servicing protocol for construction machinery at worksite is established and followed to minimize leaks and spills. | From the opening of construction activities. During the life span of the project. |
| | | - IEFCL will ensure that all maintenance and repair of equipment and vehicles are done in a secure location with clean-up materials (e.g. drip pans, containers, absorbent materials etc) readily available. | From the opening of construction activities. During the life span of the project. |
| | | - IEFCL will ensure integrating prevention and control measures set in a General Hazardous Materials Management program. | From the opening of construction activities. During the life span of the project. |
| | | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will verify the status of ground water quality in order to adopt, if necessary, dedicated actions aimed at minimizing the risk of contamination of ground water from spills of hazardous materials. | Already in place. It will be continued during the life span of the project. |
| | | - IEFCL will implement a Risk management Plan for Contaminated lands in order to identify, if necessary, dedicated actions aimed at minimizing the risk of land contamination caused by accidental spills of hazardous materials (see Chapter Seven) | It will be taken care in the ESMS |

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| | | <ul style="list-style-type: none"> - IEFCL will implement a Hazardous Materials Management Plan to minimize the risk deriving from spills of hazardous materials (see Chapter Seven). | <p>Already in place for existing plants. To be implemented accordingly for new plants from opening of construction activities.</p> |
| | | <ul style="list-style-type: none"> - In case of environmental contamination IEFCL will ensure that a planned risk management approach will be followed. | <p>During the life span of the project, if necessary.</p> |
| | | <ul style="list-style-type: none"> - IEFCL will ensure a deep characterization of soil after site cleaning, to detect potential historical releases of hazardous material¹. | <p>By the end of decommissioning activities.</p> |
| Odor Annoyance | The production processes may be associated as a source of odor annoyance by the local population. | <ul style="list-style-type: none"> - Adopt operational measures to avoid possible fugitive emissions. | <p>Already in place for existing plants. To be implemented accordingly for new plants.</p> |
| | | <ul style="list-style-type: none"> - If necessary, adopt technical methods to prevent fugitive emissions. | <p>Immediately, during start-up operation</p> |
| | | <ul style="list-style-type: none"> - Hold yearly environmental awareness/education programs for the stakeholders | <p>1 month before the start-up of the new plants.</p> |

¹ For decommissioning phase only

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| Waste production | The new project will determine an increase in solid / liquid waste production. | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will yearly verify the waste production in order to implement dedicated actions, if necessary. | Already in place. It will be maintained during the life span of the project. |
| Security | New people attracted by work opportunities may cause an increase in levels of crime and other social vices in the local communities. | - In order to beef up security for the project, IEFCL will contact government authorities to improve the strength of the police force and shall consider providing assistance with equipment to ensure improved security, if necessary. | Upon receiving the Project Authorization, if necessary. As per requirement IEPL / IEFCL security department will take care. |
| | | - If required, additional security arrangements will be made to enable the existing federal security forces to cope with such situation | If required, from the opening of construction activities. During the life span of the project. |
| | | - IEFCL will ensure that both contractor and IEFCL personnel develops a high level of security consciousness both within and outside the work area. | From the date, worker starts his activity |
| | | - IEFCL will ensure that a liaison to foster partnership with the community so as to guarantee security for the project is established and sustained. | From the opening of construction activities. During the life span of the project. |

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| Social impact | The new opportunities, allowed by the Project, could modify the social equilibrium, potentially causing frictions and social strains. | <ul style="list-style-type: none"> - According to the MoU with host communities, IEPL/IEFCL will ensure that all host communities are represented in the employment of locals during land clearing and excavation to avert any conflict that could arise from perceptions of unfairness. | From the opening of recruitment phase. |
| | | <ul style="list-style-type: none"> - IEFCL will ensure the monitoring of host communities development to identify and minimize possible causes of conflict. | From the opening of construction activities. During the life span of the project. |
| | | <ul style="list-style-type: none"> - IEFCL will adopt a Social Management System to avoid possible inter and intra communities conflicts or possible socio-cultural conflicts between the construction team and members of the host communities. | From the opening of construction activities. |
| | | <ul style="list-style-type: none"> - IEFCL will regularly hold Stakeholders Forum with the representatives of the communities | From 6 months after the opening of construction activities. During the life span of the project. |
| | | <ul style="list-style-type: none"> - IEFCL will make adequate accommodation arrangement for expatriates prior to mobilization of workforce to reduce pressure on local housing. | Before the opening of construction activities. |

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| Socio-economical condition | The Fertilizer project will be a new opportunity to improve the socio-economical condition of the communities and the workers. | <ul style="list-style-type: none"> - IEPL/IEFCL will abide by all Memorandums of Understanding (MOUs) signed with the host communities providing: - Building of/arrangements to educational/health facilities; - Access to micro credit system and merit scholarships for members of the communities. <p>For more details, see Stakeholders Engagement Plan in Appendix 7.2.</p> | Existing MoU under review and will be signed before opening of construction activities. |
| | | <ul style="list-style-type: none"> - IEFCL will ensure that contractor implements social and health awareness programs for all workers at induction and on a continuous basis throughout the life span of the project. | From the opening of construction activities. |
| | | <ul style="list-style-type: none"> - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will support for health check up programme of communities. | Already in place During the life span of the project. |
| | | <ul style="list-style-type: none"> - IEFCL will carry out enlightenment campaigns to encourage positive influences on cultural values and healthy lifestyles (e.g. breast feeding habits, alcohol and drug use, exercise, monogamy, high moral values with regard to sexuality, etc.) and discourage adverse influences (e.g. prostitution, drug abuse, alcoholism etc). | From the opening of construction activities. |

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| | | - IEFCL will support skill development programs. | By 1 year after the Project Authorization. |
| | | - In accordance to the Monitoring Program (see Chapter Seven) IEFCL will yearly verify the status of Assisted Projects in order to verify their effectiveness and to identify possible actions to be taken aimed at obtaining an enduring improvement in the existing living conditions inside the host communities. | 1 year after the start of Assisted Projects. During the life span of the project. |
| | | - IEFCL will assist the activities of the state action committee on STIs/HIV/ AIDS within the local communities. | Already in place. It will continue during the life span of the project. |
| | | - If Authorities will take projects for provision of potable water to host communities, IEFCL will also assist up to extent possible | Whenever required |
| Traffic | Movement of workers (staff, labour and construction workers), equipment, materials and Urea product. | - IEFCL will adopt a dedicated traffic management plan for the mobilization of vehicles during the construction, operation and decommissioning phases (For more details, see Traffic Management Plan in Appendix 7.1) to minimize the risk of traffic accidents, | From the opening of construction activities. During the life span of the project. |
| | | - Ensure maintenance of roads of any damage caused by project | From the opening of construction activities. During the life span of the project. |