ecosphere

Environmental Management Services

Environmental Impact Assessment

Fresca Farms (Deforestation)

March 2022

Contents

1. Identified Impacts

1.1. Impacts that arose due to site clearing activities

Aspect	Impact	Mitigation
Socio-economic	Increased work opportunities to the locals of the surrounding community.	• The Applicant must make use of local people from the surrounding community for manual seeding, composting, watering, revegetation and monitoring activities.
Aesthetics	Unpleasant visuals. A complaint was received from the applicant's neighbour residing to the west of the proposed development site.	• A row of indigenous trees (windbreak) has been planted at this boundary. This row must extend for approximately 252 meters.
Soil erosion	Increase soil erosion and as a result of vegetation removal.	• The site has already re-vegetated naturally due to the large amounts of rain received just after clearing.
Soil stabilization	Soil destabilization as a result of vegetation removal.	• The site has already re-vegetated naturally due to the large amounts of rain received just after clearing.
Revegetation	Soil resources are damaged due to the removal of vegetation.	• The site has already re-vegetated naturally due to the large amounts of rain received just after clearing.
Dust	Increased dust blow ups in the area as a result of exposed soil and lack of vegetative protection.	• The site has already re-vegetated naturally due to the large amounts of rain received just after clearing.
Habitat loss	Loss of habitat for faunal species in the area.	• A large area of the site remains uncleared and will continue to remain so. • Care has been taken to avoid clearance in sensitive areas such as the rocky outcrops, these areas will remain undisturbed. • The areas that have been cleared, have been planned to ensure that remaining sections of habitat will not be cut off, but that movement corridors will remain available to wildlife.
Biodiversity	Loss of Faunal and Floral Biodiversity	• Protected Marula trees have been marked and will not be cleared. • The areas that have been cleared, have been planned to ensure that remaining sections of habitat will not be cut off, but that movement corridors will remain available to wildlife.

1.2. Impacts that may arise as a result of the construction phase

Aspect	Potential Impact	Mitigation
Socio-Economic	Permanent and temporary employment will be created during the proposed citrus development	• Where possible, individuals residing in nearby communities should be contracted for unskilled and semi-unskilled employment opportunities.
Air Quality	Air pollution due to dust generated by construction vehicles and equipment/machinery during vegetation removal and land preparation prior to planting of crops (especially during the dry, windy conditions.)	• Ensure construction vehicles and equipment is operational only when required and not unnecessarily run when not in use. • Construction vehicles should adhere to the recommended speed limit of 30 km per hour. • Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary. • Complaints that emanate from dust issues should be attended to immediately.
Soil Quality	Contamination of soil through oil/fuel leaks or spillage from machinery and/or construction vehicle and the use of fertilizers, herbicides and/or pesticides on the site.	• Ensure vehicles are refuelled over a drip tray. • Drip tray should be placed under vehicles that stand for more than 24 hours. There should be provision of proper re-fuelling and maintenance facilities and procedures which will reduce the likelihood of soil contamination. • Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) and the SABS Code of Practise must be adhered to throughout the construction phase. • Staff should be trained on how to handle hazardous material. • The proper handling of chemicals used on the site. Good housekeeping on site. Store oils and/or fuels in appropriate areas.
	Change in the topsoil layer due to land preparation.	• A minimal amount of topsoil should be removed. • Excess topsoil should be separated and stored appropriately and then reworked into the levelled areas before planting of crops.
Water Quality	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage and handling and/or storage of hazardous materials / chemicals such as fuel The contamination of water resources through stormwater runoff	• A Stormwater Management Plan should be compiled and implemented. • Ensure vehicles are refuelled over a drip tray. • Drip tray should be placed under vehicles that stand for more than 24 hours. • Construction materials should be stored in a demarcated area. • Monitoring of groundwater elevations and contaminants are required on an ongoing basis. • The proper handling of chemicals used on the site. Good housekeeping on site. Store oils and/or fuels in appropriate areas.
Erosion	Erosion caused by the removal of vegetation, loss of topsoil and preparation of the land.	• Vegetation clearance must be kept to the proposed development site only. • An Erosion Management Plan should be compiled and implemented. • All surface run-off shall be managed in such a way so as to ensure erosion does not occur.

		• The site should be monitored regularly for signs of erosion. Remedial actions should be taken at the first signs of erosion.
	Inadequate rehabilitation and maintenance of the disturbed areas could lead to erosion and permanent loss of indigenous vegetation and establishment of alien invasive vegetation	• A rehabilitation plan should be compiled and implemented during the construction and post construction phases. • All temporary disturbed areas which will not form part of the citrus development should be rehabilitated using indigenous vegetation.
Fauna (Wildlife)	Loss of fauna due to habitat destruction. Faunal populations could become locally extinct or diminish in size due to fatalities such as, accidents, opportunistic hunting, baiting, trapping.	• During the clearing of vegetation and land preparation most vertebrae's will move away from the site, during this activity, slow moving reptiles and smaller mammals should be allowed to move away unharmed or be assisted to relocate to uncleared areas. • The clearing vegetation should only take place on the specified areas. • Staff should receive training on proper management and response should animals be encountered on site. • No trapping, hunting or baiting and removing of faunal species from the site. • Animals must not be injured or killed where possible. • Vehicles speed should be reduced to 30 kilometres per hour to reduce collisions and/or accidents.
Flora (Vegetation)	The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of natural vegetation and SCC within the proposed development footprint.	• The clearance of vegetation at any given time should be kept to the proposed development footprint. • The SCC should be translocated to the nearest appropriate habitat, preferably a protected/ undisturbed portion of the property. • Employees must be prohibited from making fires and harvesting plants. • Only indigenous species should be used for rehabilitation purposes which must aim to revegetate exposed soil. • As far as practically possible, existing roads should be utilised
	The growth and spreading of alien invasive plant species once the indigenous vegetation is removed, which could pose a threat to surrounding ecosystems.	• Alien Vegetation Management Plan must be developed and implemented to prevent the establishment and spread of undesirable alien plant species. • is recommended that planting of crops takes place as soon as possible after the removal of indigenous vegetation and land is levelled and prepared. • All alien and invasive species must be removed prior to planting. • Continuous monitoring of alien invasive plants.
Waste Management	Pollution of the site and surrounding environment due to the inappropriate storage	• Littering must not occur on site. • General waste must be confined to bins which should be provided. • General waste must be removed to a landfill site, as and when required.

	and disposal of the generated waste	• Construction waste must be confined to demarcated area to prevent pollution. • Construction waste must be removed to a registered landfill site, as and when required. • Waste must not be buried or burned on site.
Noise	Noise disturbances caused by construction activities- machinery vehicles used for clearing vegetation and land preparation	• All the relevant municipal by-laws relating to noise control should be adhered to. • All construction vehicles and equipment must be kept in good working order to reduce possible noise pollution. • Construction activities should be kept strict and acceptable working hours. • Adherence to Occupation Health and Safety Act. • A "complaints register", consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase
Cultural & Heritage	Loss of natural or cultural heritage due to the destruction of artefacts during clearance of vegetation and land preparation.	• Should any unmarked sub-surface sites and archaeological artefacts be identified on site, work should cease in the immediate area and a heritage practitioner should be informed as soon as possible so that an investigation can be undertaken. • Any graves that are found on site should be fenced off and access must be allowed for visitation/ or alternatively it may be negotiated to relocate the graves.
Visual	Construction activities such as the clearing of vegetation and land preparation, increase in dust and the presence of machinery could result in the visual disturbance. The transformation of the current indigenous vegetation to citrus orchards is likely to alter the aesthetic quality.	• The clearance of vegetation must be restricted to the demarcated development footprint. • Any disturbed areas should be rehabilitated as soon as possible.

1.3. Impacts that may result from the operational phase

Aspect	Potential Impact	Mitigation
Socio-Economic	During the operational phase, both permanent and temporary employment will be created.	• Where possible, individuals residing in the nearby communities should be contracted for unskilled and semi-skilled employment opportunities.
Air Quality	Possible dust pollution during the dry windy conditions.	• Monitor the dust created from activities during the operation phase and use dust suppression such as spraying water on exposed soft soil surfaces.
Soil Quality	Soil leaching caused by poor irrigation methods and/or stormwater management, coupled with	• The quality and health status of surrounding soils should be monitored throughout the operational phase.

	the application of fertilisers, pesticides, and/or herbicides, could lead to the loss/alteration of soil quality and structure within the study area.	• Disturbed areas must be stablished using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil. • The application of fertilisers, pesticides, and/or herbicides to cultivated areas must be carefully managed. • The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs of erosion • Any alteration of soil quality should be remediated in line with best practices.
Water Quality	Surface and ground water contamination through the overuse of fertilizers, herbicides, and pesticides. Surface and ground water contamination stormwater runoff.	• A Stormwater Management Plan should be compiled and implemented. • Monitoring of groundwater elevations and contaminants are required on an ongoing basis. • The proper handling of chemicals used on the site. Good housekeeping on site. Store oils and/or fuels in appropriate areas.
Erosion	The failure to install erosion control measures and storm water management measures could result in increased runoff causing erosion.	• A suitable Erosion Management Plan or method statement should be developed. • The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs of erosion • Stormwater control must be undertaken to prevent soil loss from the site. • Stormwater management plan must be compiled and implemented. • Irrigation methods must ensure minimal runoff. • Exposed and/or cleared areas must be stabilised using the appropriate vegetation to prevent soil erosion and the loss of valuable topsoil. • The quality and health status of surrounding soils should be monitored throughout the operational phase. • Where possible existing roads and walk paths should be used at all times. • Speed limits should be put in place to reduce erosion.
Visual	The visual impacts of the agricultural activities will not have a negative impact as the activity is not out of character with the surrounding areas / land uses.	• Rehabilitation of the disturbed areas should be monitored during the operational phase.
Fauna	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	• Train all staff on site regarding the proper management and response should animals be encountered. • The specified road speed limits should be adhered to. • The areas that are undisturbed should be left in their natural state, as this will encourage certain animal life to stay in those areas.

	During the operation phase, little to no natural vegetation will be present on site- the site will only be covered with crops which means that the chance of finding animals will be highly unlikely. The areas around the site will retain their natural vegetation	• Bird houses can also be built around the site which will encourage birdlife to occupy them and keep the pest numbers low.
Flora (vegetation)	Unsustainable and irresponsible farming practises could result in the loss or damage of the surrounding indigenous vegetation. Poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.	• Sustainable farming methods must be practiced during the operational phase. • Any cleared areas, which are not used for the cultivation of citrus, should be rehabilitated • Vegetation must be retained where possible to avoid soil erosion. • The Alien Vegetation Management Plan must be implemented to prevent the establishment and prevent the spread of undesirable alien plant species during the Operational Phase. • Regular monitoring and removal of all alien vegetation and inspection in and around the crop area.
Noise pollution	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural activities, there may be little noise during the operational phase when harvesting takes place	• All vehicles and equipment must be kept in good working order to reduce possible noise pollution. • Agricultural activities should be kept strict and acceptable working hours. • Adherence to Occupation Health and Safety Act.
Waste management	The inappropriate storage and disposal of general waste is likely to result in the pollution of the site and surrounding environment	• Littering must not occur during the operational phase and all general waste must be disposed of in bins or waste skips for disposal at a suitably registered landfill. • No burning or burning of waste on site.

1.4. Impacts that may result from the decommissioning phase

Due to the nature of the project there has been no plans made for a decommissioning phase as the site will continue to be used for agricultural activities. If the project is decommissioned at a later stage, the impacts associated are likely to be similar to the impacts which have been identified in the construction phase. It is then recommended that the EMPr be updated by a suitably qualified EAP prior to the decommissioning of the project abs implementation throughout the decommissioning phase.

2. Significance ratings

2.1. Methodology

The methodology followed to determine the significance of each impact caused by the activity are set out below:

The potential impacts are assigned a significance rating (S). (S) is formulated by adding the sum of numbers assigned to Magnitude (M) Extent (E) and Duration (D), and multiplying the sum by the Probability (P): **S= (M+E+D) P**

Criteria	Category	Score
Magnitude	None	0
(How serious is the	Low	2
impact and how easily	Moderate	4
can it be reversed)	High	6
Extent	Site	1
(What is the scale	Local	2
And size of the impact)	Regional	3
	National	4
Duration	Immediate	1
(Over what time scale	Short Term	2
Will this impact have effect)	Medium Term	3
	Long Term	4
	Permanent	5
Probability	Improbable	1
(How likely is it that	Probable	2
This impact will occur)	Definite	3

The significance ratings calculated has been done by taking into account the mitigation measures suggested above and their effectivity in mitigating the impacts.

The significance ratings are given below:

- Zero impact: where the project will have no impact;
- Low is <20: where this impact would not have a direct influence on the decision to develop in the area,
- Medium is 20-40: where the impact could influence the decision to develop in the area unless it is effectively mitigated; and
- High is >40: where the impact must have an influence on the decision process to develop in the area.

Impact Significance	Description of Significance Ratings
Zero	Project will have no impacts.
Low is <20	Impacts have no influence on decision.
Medium is 20 – 40	Impacts could influence decision.
High is >40	Impacts must influence decision.

2.2. Impact significance for impacts that arose due to site clearing activities

Aspect	Impact	Before Mitigation		After Mitigation		Type of impact
		(M+E+D) P	Impact Significance	(M+E+D) P	Impact Significance	
Socio-economic	Increased work opportunities to the locals of the surrounding community.	Positive	Positive	Positive	Positive	Direct
Aesthetics	Unpleasant visuals. A complaint was received from the applicant's neighbour residing to the west of the proposed development site.	(4+2+4)2	20	(2+2+4)2	16	Indirect
Soil erosion	Increase soil erosion and as a result of vegetation removal.	(2+1+2)2	10	(2+1+2)1	5	Indirect
Soil stabilization	Soil destabilization as a result of vegetation removal.	(2+1+2)2	10	(1+1+2)1	4	Indirect
Revegetation	Soil resources are damaged due to the removal of vegetation.	(4+1+3)2	16	(2+1+2)1	5	Direct
Dust	Increased dust blow ups in the area as a result of exposed soil and lack of vegetative protection.	(2+2+3)2	14	(1+2+2)1	5	Indirect
Habitat loss	Loss of habitat for faunal species in the area.	(4+1+3)2	16	(2+1+2)2	10	Direct
Biodiversity	Loss of Faunal and Floral Biodiversity	(4+1+2) 2	14	(2+1+2)2	10	Direct

2.3. Impacts that may arise as a result of the construction phase

Aspect	Impact	Before Mitigation		After Mitigation		Type of impact
		(M+E+D) P	Impact Significance	(M+E+D) P	Impact Significance	
Socio-Economic	Permanent and temporary employment will be created during the proposed citrus development	(4+2+2)2	16	Positive	0	Direct
Air Quality	Air pollution due to dust generated by construction vehicles and equipment/machinery during vegetation removal and land preparation prior to planting of crops (especially during the dry, windy conditions.)	(4+2+4)2	20	(2+1+1) 2	8	Cumulative
Soil Quality	Contamination of soil through oil/fuel leaks or spillage from machinery and/or construction vehicle and the use of fertilizers, herbicides and/or pesticides on the site.	(4+1+3) 2	16	(2+1+2)1	5	Indirect
	Change in the topsoil layer due to land preparation.	(4+1+4)2	18	(2+1+2)2	10	Direct
Water Quality	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage and handling and/or storage of hazardous materials / chemicals such as fuel	(4+2+3)2	18	(2+1+2)1	5	Indirect

	The contamination of water resources through stormwater runoff					
Erosion	Erosion caused by the removal of vegetation, loss of topsoil and preparation of the land.	(4+1+2) 2	14	(3+1+2)2	12	Indirect
	Inadequate rehabilitation and maintenance of the disturbed areas could lead to erosion and permanent loss of indigenous vegetation and establishment of alien invasive vegetation	(6+2+3)2	22	(2+1+3)2	12	Direct
Fauna (Wildlife)	Loss of fauna due to habitat destruction. Faunal populations could become locally extinct or diminish in size due to fatalities such as, accidents, opportunistic hunting, baiting, trapping.	(5+2+2)2	18	(3+2+2)1	7	Indirect
Flora (Vegetation)	The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of natural vegetation and SCC within the proposed development footprint.	(4+1+4) 2	18	(2+1+3)2	12	Direct
	The growth and spreading of alien invasive plant species once the indigenous vegetation is removed, which could pose a threat to surrounding ecosystems.	(4+1+2) 2	14	(2+1+2)2	10	Indirect

Waste Management	Pollution of the site and surrounding environment due to the inappropriate storage and disposal of the generated waste	(4+1+3)3	24	(2+1+2)2	10	Direct
Noise	Noise disturbances caused by construction activities- machinery vehicles used for clearing vegetation and land preparation	(4+1+2) 2	14	(1+1+2)2	8	Direct
Cultural & Heritage	Loss of natural or cultural heritage due to the destruction of artefacts during clearance of vegetation and land preparation.	(4+2+4) 2	20	(2+1+2)2	10	Direct
Visual	Construction activities such as the clearing of vegetation and land preparation, increase in dust and the presence of machinery could result in the visual disturbance. The transformation of the current indigenous vegetation to citrus orchards is likely to alter the aesthetic quality.	(4+2+4)2	20	(4+1+2) 2	14	Indirect

2.4. Impacts that may result from the operational phase

Aspect	**Impact**	**Before Mitigation**		**After Mitigation**		**Type of impact**
		(M+E+D) P	Impact Significance	(M+E+D) P	Impact Significance	

Socio-Economic	During the operational phase, both permanent and temporary employment will be created.	(4+2+2)2	18	Positive	0	Direct
Air Quality	Possible dust pollution during the dry windy conditions.	(4+2+3)2	18	(2+1+2)2	10	Cumulative
Soil Quality	Soil leaching caused by poor irrigation methods and/or stormwater management, coupled with the application of fertilisers, pesticides, and/or herbicides, could lead to the loss/alteration of soil quality and structure within the study area.	(3+1+3) 2	14	(2+1+2)1	5	Indirect
Water Quality	Surface and ground water contamination through the overuse of fertilizers, herbicides, and pesticides. Surface and ground water contamination stormwater runoff.	(4+2+2)2	16	(2+2+2)1	6	Indirect
Erosion	The failure to install erosion control measures and storm water management measures could result in increased runoff causing erosion.	(3+1+2) 2	12	(2+1+1)2	8	Direct
Visual	The visual impacts of the agricultural activities will not have a negative impact as the activity is not out of character with the	(4+2+4)2	20	(2+2+3)2	14	Indirect

	surrounding areas / land uses.					
Fauna	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	(4+2+2)2	16	(3+2+2)2	14	Indirect
	During the operation phase, little to no natural vegetation will be present on site- the site will only be covered with crops which means that the chance of finding animals will be highly unlikely. The areas around the site will retain their natural vegetation	(3+1+2) 2	12	(1+1+2)2	8	Direct
Flora (vegetation)	Unsustainable and irresponsible farming practises could result in the loss or damage of the surrounding indigenous vegetation. Poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.	(4+1+4) 2	18	(3+1+2)2	12	Indirect
Noise pollution	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural	(4+1+2) 2	14	(1+1+2)2	8	Direct

	activities, there may be little noise during the operational phase when harvesting takes place					
Waste management	The inappropriate storage and disposal of general waste is likely to result in the pollution of the site and surrounding environment	(4+1+3)3	24	(2+1+2)2	10	Direct