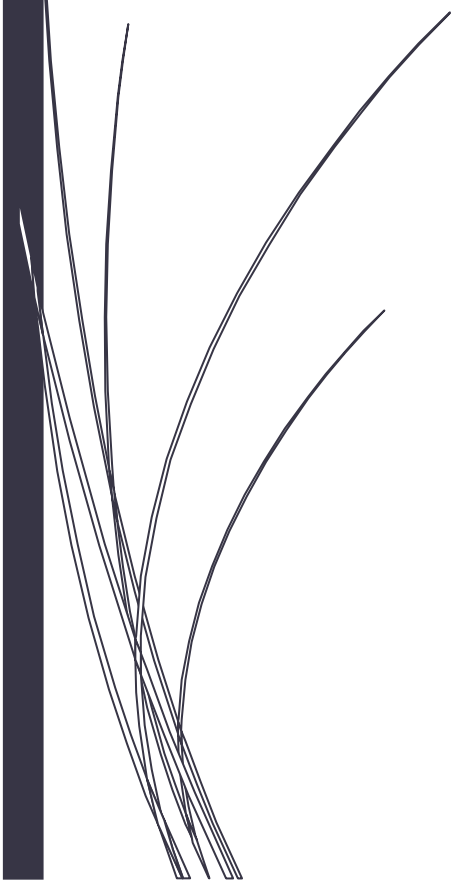
Guidance Notes for SMEs

(Agriculture Sector)

In answering the due diligence questions for Guiding Principles 3 and 4 for SMEs

Note: This document is developed to assist financial institutions **("FIs")** in supporting small and medium enterprise **("SME")** clients to provide data and input in answering the CCPT Due Diligence Questions **("CCPT DDQ")**. The focus of this document is to provide additional clarifications, practical guidance and simplified approaches where needed, to further facilitate assessment of SME clients.



Introduction to Agriculture Sector

Term	Impact of the Agriculture Sector to Climate Change
Pollution	Agriculture activities could pollute airways, contaminate soil and compromise water quality, incurring harmful effects on humans, animals, plants and the planet in general.
Ecosystem & Biodiversity	Minimising the impact on ecosystems and biodiversity during agriculture cycle is crucial for maintaining ecological integrity and long-term sustainability.
Efficient Use of Resources	• An improper match of field and tree selection would cause an inefficient use of resources to generate the same unit of output. • Improper access roads can cause soil erosion, landslides and sedimentation of water channels, resulting in waste or inefficient use of resources. • Improper irrigation activities (e.g., excessive use or insufficient recharge) can cause insufficient water resources to support the living organisms in the field and its surroundings.
GHG Emissions	Greenhouse gas **("GHG")** emissions and other climate change impacts due to forest fires, forest or peatland clearance, and growing and transformation practices. Gaseous constituents of the atmosphere, both natural[1] and anthropogenic[2], that absorb and emit radiation at specific wavelengths, within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and the clouds. Water vapour **("H_2O"),** carbon dioxide **("CO_2"),** nitrous oxide **("N_2O"),** methane ("**CH_4**") and ozone **("O_3")** are the primary GHG in the Earth's atmosphere

[1] Such as decomposition of organic matter.

[2] Such as burning fossil fuels and agriculture.

Due Diligence Questions: GP3 – No Significant Harm to the Environment	
No	**Guidance Notes**
GP3 – General	
1.1 Risk identification (General)	

a)	Use existing internal databases or any other publicly available sources to screen for the Client's related legal/ negative news vis-à-vis climate/ environment related issues (e.g., media publications such as newspapers, specialised climate/environmental news sites, NGO reports).
	
	• The Client is to provide details of the nature of any adverse incident, and whether there is/was any corresponding regulatory action (e.g., enforcement/ prosecution/ quantity of fine/ pending court decision/ pending appeal by the Client), to be backed by documentary evidence; and
	• The FI is recommended to verify the Client's information through the following websites:
	  ○ **https://www.doe.gov.my/en/court-case-list/**; and/or
	  ○ **https://www.doe.gov.my/penguatkuasaan/paparan-kes-mahkamah/**
	
	Indicate if there are any matching records and data in the database(s). Any discrepancies with the Client's statements should be explained by the Client and documented accordingly.

1.2 Risk management (General)	
a)	The Client should list down measures being taken to address any climate/ environmental concerns. This should include obtaining necessary legal approvals and/or permits under the jurisdiction where it operates.
GP3 – Pollution	
2.1 Risk identification (Pollution)	
a)	The following are ways to identify whether the Client's business operations use/ release hazardous chemicals/ material and create waste/ pollutants that cannot be recovered, reused and/or disposed of in a sustainable manner in agriculture and forestry industries in accordance to its value chain/ life cycle including but not limited to: - **Palm Oil** • Impact of overflowing effluent waste to monsoon drains, streams/ rivers causing pollution which can result in prosecution, fines, disruption in operations and severe reputational damage. • Flooding and silt deposits flowing into rivers as a result of soil erosion[3]. • Water and soil pollution arising from direct release of waste and palm oil effluent[4]. • Land clearance through open burning resulting in air pollution and transboundary haze. • Fines for non-compliance with legal requirements in relation to pollution prevention, especially with respect to solid waste and hazardous material management and disposal. • Threats to the availability of soil due to overuse and the associated higher operational costs.

[3] Planting on unsuitable slopes can lead to soil erosion and loss.
[4] From release of untreated effluents and indiscriminate use of pesticides, herbicides and fertilisers.

Agriculture (Food crop)

1. At preparation stage[5] and growth stage[6]
    - Air pollution through emissions from farm buildings, vehicles, machinery and equipment.
    - Land pollution through generation of unwanted organic (e.g., ground cover plants, natural vegetation, old planting material) and inorganic materials (e.g., rocks, debris from previous planting cycle) from land clearing activities.
    - Water pollution through excessive agrochemical application, and improper irrigation and drainage system.
    - Air quality affected by transmission of allergenic pollen which can be blown for hundreds of kilometres.
    - Air pollution from burning of rice straws at the end of planting season to commence new planting.
    - Fertiliser waste such as fertiliser bags that have not been treated and decomposed appropriately will lead to plastic pollution resulting in bigger threats to plants and animals. Plastics will degrade into small particles and become microplastics. These microplastics can change the physical structure of soil and limit its capacity to hold water, eventually affecting plants by reducing root growth and nutrient uptake.
    - Fertiliser waste can release harmful chemicals into the surrounding soil which may can seep into groundwater and ecosystem resulting in contamination.
    - Over-application of pesticides, herbicides and insecticides may lead to a build-up of pest resistance, which will lead to greater reliance on pesticides and greater contamination.

2. At collection stage[7]
    - Harvesting equipment such as gloves, hand tools and picking baskets which were not disposed of properly will result in waste build-up.
    - Air pollution through emissions from farm buildings, vehicles, machinery, and equipment; and improper disposal of crop residue (e.g., burning).
    - Land pollution through improper disposal of crop residue (e.g., landfill).
    - Water pollution through improper disposal of wastewater use for cleaning crops.

Forestry

1. At preparation stage[8]
    - Intensive usage of nitrogenous fertiliser in nursery can cause water eutrophication, and accelerating the growth of algae.

2. At growth stage[9]
    - Intensive usage of nitrogenous fertiliser in nursery can cause water eutrophication, and accelerating the growth of algae.
    - Improper disposal of materials (e.g., gloves, lubricants) will create waste.

3. At harvesting stage[10]
    - Air and noise pollution (e.g., from trucks, equipment) affect worker health and surrounding communities.
    - The heavy machinery used to remove vegetation and trees exposes the soil, increasing the risk of erosion,

[5] Agriculture - Preparation stage involves land surveying and field preparations, irrigation and drainage systems, equipment/machinery supply, nursery/seeds/seedlings preparation, agrochemicals preparation, farm facilities.

[6] Agriculture - Growth stage involves for example planting, irrigation, fertiliser application, pest and disease control, weeding, pruning, general upkeeping and maintenance

[7] Agriculture - Collection stage involves harvesting, cleaning, sorting, grading and storing.

[8] Forestry – Preparation stage entails seedlings preparation, silviculture - site preparation, agrochemicals preparation, fuels/lubricants for machinery preparation

[9] Forestry – Growth stage entails silviculture which covers planting and stand management.

[10] Forestry – Harvesting stage entails felling, yarding, and loading.

	causing water and air pollution. • Air pollution through emissions from vehicles, machinery and equipment. • Water pollution through splash erosion[30] and surface erosion wash sediments into the nearby waterways (e.g., rivers).
2.2 Risk management (Pollution)	
a)	The following can be the general mitigation measures undertaken by the Client in addressing the identified pollution: - **Palm Oil** • Established standard operating procedure **("SOP")** on amongst others, improvement in waste/ effluent management, improvement in water quality metrics and soil degradation, reduction waste per tonne of fresh fruit bunch **("FFB")**/ crude palm oil **("CPO"),** chemical usage per hectare of estate, monitoring number of hotspots/ fire, and monitoring of air quality. • Dedicated training courses (e.g., Certified Environment Professional in the Palm Oil Mill Effluent) conducted. • Environmental, safety and health **("ESH")** performance monitoring and reporting implemented. • Compliance to applicable laws/ regulations/ standards/ certifications that are related to the oil palm industry in Malaysia such as Malaysian Sustainable Palm Oil **("MSPO")** and other applicable certifications such as Roundtable on Sustainable Palm Oil **("RSPO")**/ International Sustainable and Carbon Certification **("ISCC")** if applicable, and require the counterparties to be MSPO certified and comply with the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015). **Agriculture (Food crop)** • An Environmental Management Plan (which is part of the environment impact assessment **("EIA")**) which requires control of air pollution and noise. • Comply with one of the myGAP certification requirements that is water and harvest sample of pesticides residue, heavy metal and bacterial analysis. **Forestry** • Prohibit the use of highly hazardous pesticides. • Protective gears to be worn by workers when managing wastes. • Evidence of: - o Optimisation of resources and reduction of waste o Environmentally appropriate procedures (that conserves environmental values[11]) for collecting, cleaning up, transporting and disposing of/ treating all waste materials • Procedures for maintaining disposal/ treatment records.
GP3 – Ecosystem & Biodiversity	
3.1 Risk identification (Ecosystem & Biodiversity)	
a)	Environmentally sensitive areas **("ESAs")** or key biodiversity areas **("KBAs")** typically refer to geographic regions or locations that are recognised for their high ecological significance and the presence of diverse and often unique species of flora and fauna. Such areas are considered important for the conservation of biodiversity due to the richness and variety of life forms they support.

[11] Include ecosystem functions (including carbon sequestration and storage), biological diversity, water resources, soils, atmosphere, and landscape values (including cultural and spiritual values)

	To identify whether the Client's operations located in or near ESAs and KBAs**,** FIs can make use of tools such as **Integrated Biodiversity Assessment Tool ("IBAT")** and **Global Forest Watch**. Maps of ESAs can be referred to those published in the **National Physical Plan 3 and 4 (page 94)**. Alternatively, FIs may conduct any online (e.g., Google Earth Pro) and offline map search to determine if the following example types of ESAs or KBAs are near the Client's business location(s) (e.g., within a 10 kilometre radius): - • Marine and coastal biodiversity • Mangrove forests • Coral reefs • Marine parks • Critical coastal erosion areas • Turtle landing sites • Highlands and forested wetlands • Economic and ecological significance In addition to the above, FIs may refer to Reference List of Protected Areas (**https://www.mybis.gov.my/one/pamaps.php**) to identify whether the Client's business operations has impacted the ESAs and KBAs.
b)	Examples of tools and sources that can be used to assess whether the Client's operations have negative impacts on biodiversity and the surrounding ecosystem include: • Exploring Natural Capital Opportunities, Risks and Exposure Tool **("ENCORE")** (**url: https://encorenature.org/en)*** • WWF's Biodiversity Risk Filter **(url: https://riskfilter.org/biodiversity/home)** • High Conservation Value **("HCV")** assessment • High Carbon Stock **("HCS")** assessment • International Union for Conservation of Nature **("IUCN")** red list species • On-site/desktop biodiversity assessment • Environmental Impact Assessment **("EIA")** report • Environmental Management Plan **("EMP")** (for Peninsular Malaysia), EIA Report Approval Certificate with signed Undertaking and specific terms and conditions (for Sarawak) or Agreement of Environment Conditions **("AEC")** (for Sabah) • Strategic Environmental Assessment **("SEA")** and Cumulative Effects Assessments • Plantation Development Plan **("PDP")**, including maps of conversion (of natural forest to plantation) area(s) • Integrated pest management plan/silvicultural plan **Please note that when using the tools above, please select the 'Impacts' (alludes to the ways in which the Client's activities impact ecosystem services and natural capital) option as opposed to the 'Dependencies' option (used for GP4.1 & GP4.2).* FIs may also consider the occurrence of any of the following events before determining if the Client's business operations have caused any negative impact on the biodiversity and its surrounding ecosystem: - **For general business activities that may involve land access, land-use, land-use change and acquisition** 1. <u>At preparation stage</u> • Soil erosion can occur from forest clearing or poor logging and road-building practices, leading to incidents of major regional and national flooding and water contamination. Forest provides a wide variety of

productive and environmental services, so the land use change affects the environmental services provided by the forest depending on the nature of the change such as soil erosion.

- Location selection will determine whether the field conditions are feasible for growth activities of silviculture. An improper match of field and tree selection would cause an inefficient use of resources to generate the same unit of output.
- Land clearing/ removal of unwanted organic (e.g., ground cover plants, natural vegetation, old planting material, etc.) and inorganic materials (e.g., rocks, debris from previous planting cycle). Over-clearing of organic material on the field can leave the topsoil exposed to natural elements, which can cause soil erosion and degradation of soil health. Soil health and quality have a direct link to production yields and crop quality.
- Improper land use planning can also result in unnecessary removal of trees, shrubs and ground cover, which exposes the land to natural elements.
- Access roads allow for efficient movement of farm personnel and vehicles (e.g., trucks, motorbikes, tractors, other specialty vehicles) with minimum disruption to the soil surface. Improper access roads can cause soil erosion, landslides and sedimentation of water channels.

2. <u>At growth stage</u>
    - Weeding will control the growth and spread of weeds in the forest stand either through mechanical (e.g., pulling, digging, ploughing, mowing) or chemical (e.g., herbicide, weedicide) methods. Improper mechanical weeding causes damage to the soil surface, or in worse cases, soil erosion and land degradation.
    - Irrigation affects the flow of water into (through rainfall or irrigation) and out of the field (e.g., drainage). Overwatering through natural or irrigation systems causes an imbalance to the sources of water (e.g., surface and ground). Overutilisation of sources of water affects the recharging of groundwater and could lead to permanent changes to the soil health.
    - Agrochemical application introduces foreign substances into the forest stand (e.g., fertilisers, weedicide, herbicide). Improper application of agrochemicals leads to an imbalance in the chemical properties of the soil (e.g., pH, cation exchange capacity, salinity).
    - Upkeep and maintenance involve the regular upkeep of natural and man-made farm infrastructure (e.g., roads, bridges, waterways), machinery and equipment. Improper upkeep and maintenance can result in land damage from malfunctioning infrastructure (e.g., collapsed roads/bridges/waterways).

3. <u>At collection stage</u>
    - Felling damage such as destruction of saplings, long-lasting soil compaction from harvesting equipment, number and frequency of machine cycles.
    - The removal of soil from logging may expose bedrock, preventing forest regeneration and depleting the capital of site nutrients.
    - Soil erosion (leading to flooding) and degradation (leading to loss of tree cover, skid trails).
    - Short rotation of logging will not allow enough time for the nutrient capital to recover by natural inputs, such as by precipitation, nitrogen fixation, and weathering of minerals.

Palm Oil

- Adverse Environmental Impact Assessment **("EIA")** [Act 127: Environmental Quality Act (Prescribed Activities) (Environmental Impact Assessment) Order, 2000].
- Damage to biodiversity due to unsustainable production practices.
- Deforestation and encroachment into forest reserves.
- Adverse interaction with local communities if ecosystem services are damaged or access to use is impaired.
- Negative impacts of large-scale conversion of forests and human-wildlife conflict on protected areas,

endangered species and/or critical habitats and the associated delays and additional costs to address and prevent such impacts.

Agriculture (Food crop)

1. At preparation stage
   - Soil erosion, compaction, salinity, pH, organic matter, soil structure and nutrient balance can each become critical and difficult to reverse, as soil erosion reduces the ability to store water and support plant growth, thereby reducing its ability to support biodiversity.
   - Salinisation and waterlogging from poor irrigation can result in the reduction of yield of salt-sensitive crops since the salts prevent plant roots from making use of water in the soil.
   - Farmland expansion can reduce species richness, which lowers the productivity and efficiency of ecosystems by limiting the resources accessible to other species.
   - Homogenisation of farmland undermines biodiversity at the farm and landscape level in multiple ways. Habitat uniformity across space and time undermines the land's ability to support diverse ecosystems and viable populations of species.

2. At growth stage
   - Soil compaction reduces water infiltration and lead to run-off of nutrients in flood events.
   - Soil health can be negatively impacted through unsustainable application of harmful and potentially toxic agrochemicals.
   - Unsustainable farming can also boost the population of organisms that have negative effects on the local or native organisms (e.g., through the introduction of crop diseases which then spread away from their introductory sites to harm surrounding wildlife).
   - Excessive application and misuse of agriculture inputs may have spillover effects beyond the farm area itself (e.g. pesticides kill not only identified pests but other beneficial insects in the vicinity).
   - Use of equipment/ machinery creates noise pollution that could lead to migration of certain fauna/ animal species, thus affecting the ecosystems (e.g., the food supply chain and create new competition and conflict between species).
   - Monocropping causes shifts to more pollinator-dependent cropping, and the absence of sufficient pollinator populations can actually contribute to pollinator decline via natural habitat loss.
   - The use of Genetically Modified Organisms **("GMOs")** crops can limit the breeding of native crops, causing reduction in other plant types, leading to a loss of biodiversity.

3. At collection stage
   - Harvesting equipment such as gloves, hand tools and picking baskets which are not disposed of.
   - Soil health can be negatively impacted through pre- and post-harvest due to the heavy equipment use, thus causing soil compaction. Soil compaction decreases soil biodiversity by decreasing microbial biomass, enzymatic activity, soil fauna and ground flora.
   - Extraction of crops from the field can cause a temporary disturbance and displacement of living organisms that have made those plants or surrounding landscape their home.

Forestry

1. At preparation stage and growth stage
   - Conversion, fragmentation, or degradation of forests can contribute to climate change, loss of ecosystem services, and acute habitat degradation and biodiversity loss, including in habitats with high conservation values.
   - Use of herbicides/ pesticides/ fertilisers could unintentionally spillover to other flora and fauna, which may disrupt balance and biodiversity.
   - Use of GMOs for silviculture may negatively affect biodiversity and disrupt natural systems as patterns of

	interactions between flora and fauna species would be altered with the introduction of GMOs. 2. <u>At harvesting stage:</u> • Deforestation, unsustainable harvesting and excessive harvesting cause loss/ degradation of biodiversity, loss of habitats and protected/ endangered species and destruction of high conservation values (including cultural values). • Clear-cutting and indiscriminate logging destroy the canopy of the rainforest, making it impossible for the forest to recover because the younger trees require more room and light to thrive. • Secondary erosion harms aquatic ecosystems through the deposition of silt (or siltation), which covers gravel substrates crucial for fish spawning. • Further conversion of forests to build access roads and infrastructure may lead to fragmentation of wildlife habitat.
3.2 Risk management (Ecosystem & Biodiversity)	
a)	Internal remedial measures incorporated into the processes by the Client may include any one or more of the following (non-exhaustive): **For general business activities that may involve land access, land-use, land-use change and acquisition** • Soil Management Plan is developed and implemented with a focus on: - o Soil productivity, including retention of soil biomass levels, soil structure, salinity, pH, and carbon sequestration. o Crop and geographically appropriate practices such as no-till, only planting on suitable slopes, use of cover crops, crop rotation, tree hedges, contour planting and elimination of in-field burning. o Adequate protection of riparian areas. • Product is produced/ harvested and traded in compliance with all applicable local, national, and ratified international laws and regulations. • Producer holds legal rights to conduct activities on the area of land. **Palm Oil** • Compliance to applicable laws/ regulations/ standards/ certifications that are related to the oil palm industry in Malaysia such as MSPO and other applicable certifications such as RSPO/ ISCC if applicable, and require the counterparties to be MSPO certified and comply with the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015). • Produce and expand production exclusively on lands that were deforested or converted prior to a specified/ stipulated cut-off date. • Rehabilitate degraded land and preserve ecosystem services through responsible production practices on already converted land. • Reduce the need for expansion into natural ecosystems by improving yields (especially relating to smallholders) through implementation of more sustainable and efficient agricultural practices. • Adopt No Deforestation, Peat and Exploitation **("NDPE")** Policy. • Adopt science-based metrics that integrate biodiversity considerations (e.g., IUCN Guidelines for planning & monitoring corporate biodiversity performance, Species Threat Abatement and Restoration ("STAR") metric). • Avoid over-exploitation of certain species (plant or animal) or introduction of certain invasive, non-native species that has the potential to cause biodiversity loss.

Agriculture (Food crop)

- Integrated Pest Management **("IPM")** plan is developed and implemented, ideally incorporating biological controls.
- Integrated Weed Management plan is developed and implemented, with a focus on cultural and biological controls, appropriate rates of pre-emergent and post-emergent applications, and appropriate altering of active ingredients. The toxicity of annual applications of pesticides is continuously reduced or maintained.
- Nutrient Management Plan is developed and implemented, with a focus on:
    - Optimal uptake and minimal loss of nutrients has been developed and is implemented.
    - Soil and foliage testing (regularly and especially prior to fertiliser applications)
    - Use of variable rate technologies for fertiliser application
    - Application based on up-take
    - Application informed by weather conditions
    - Crop rotation
    - Use of cover crops and filter strips.
- Appropriate, science-based riparian zones are established and maintained to prevent fertilizer run-off into freshwater and marine habitats. Broadcasting of fertilizer is avoided, with preference for direct deposition into the soil.

Forestry

- Use the EIA and HCV assessment report to identify protected areas and sensitivities (HCV, HCS, ESA).
- Silviculture Plan and corresponding forest management policy should demonstrate elements and considerations of international treaties, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora **("CITES")** and International Tropical Timber Agreement **("ITTA").**
- Maintain and/or enhance HCV areas by establishing buffer zones around HCV areas to protect them from being affected by timber harvesting activities and practice sustainable harvesting (e.g., selective harvesting, reduced impact logging).
- No conversion of natural forest or HCV areas to plantations or to non-forest land use, nor transform plantations on sites directly converted from natural forest to non-forest land use, except when the conversion: -
    - affects a very limited portion of the area of the management unit;
    - will produce clear, substantial, additional, secure long-term conservation and social benefits in the management unit; and
    - does not damage or threaten HCV, nor any sites or resources necessary to maintain or enhance those HCV.
- Implement integrated pest management plan/silvicultural plan.
- Documentation of identified negative impacts and management prescriptions to address them.
- SOPs for identification and management of conservation zones, protection areas, connectivity/wildlife corridors and records of implementation.
- Recorded use of highly hazardous pesticides.
- Pesticide inventory, records of chemical pesticide use in nurseries and field.
- Policy document and/or long-term strategy or plan for eliminating chemical pesticide application.
- Commitment to eliminate use of highly hazardous pesticides.
- Those listed in Stockholm Convention on Persistent Organic Pollutants and Rotterdam Convention on the Prior Informed Consent Procedure.

GP3 – Efficient Use of Resources	
4.1 Risk identification (Efficient Use of Resources)	
a)	Clients with high dependencies on water/ energy/ other natural resources must show good resource management within their business to ensure sustainability of the natural resources. Sectoral data/ trends can be used as a benchmark or basis in assessing the significance of water/ energy/ other natural resource consumption within the Client's business operations. The tools below can be used to identify and assess the Client's dependence on specific natural capitals based on its sector as well as geographic location: - • Exploring Natural Capital Opportunities, Risks and Exposure Tool ("ENCORE", url: **https://encorenature.org/en**); and • WWF's Biodiversity Risk Filter (url: **https://riskfilter.org/biodiversity/home**) *Please note that, when using the tools above, please select the 'Dependencies' (alludes to the ways and extent to which the Client's activities rely on certain resources/ natural capital) option as opposed to the 'Impacts' option (used for GP3.1 & GP3.2).* *Note: Resource efficiency refers to sustainable use of natural resources such as land, minerals, water, fuels, timber, fertile soil, clean air and biodiversity. Common use in overall industry context is the use of fuel (energy) and water. Where possible, the Client should measure and compare the use of essential resources against an appropriate benchmark (e.g., a recognised local or international standard or industry best practice).* *For more information pertaining to green certifications that are relevant to SMEs, please refer to: **https://www.jc3malaysia.com/esg-jumpstart-for-smes**.* The following examples are the non-exhaustive indicators that the Client's business operations lack or adopt non-efficient use of resources: - **Palm Oil** Water • Destruction of riparian zone. • Inefficient use of water in regions with high water source vulnerability. • Improper irrigation activities (e.g., excessive use or insufficient recharge) can cause insufficient water resources to support the living organisms in the field and surroundings. Land access, land-use, land-use change and acquisition • Land use/ land-use change not approved by the relevant land office or the respective state government for oil palm cultivation. • Delays and additional costs of securing land and access, particularly if it involves resettlement of the local population and/or economic displacement of communities. • Acquisition of land without FPIC (perceived "land grabbing"). • Corruption/ bribery in land acquisition process. • Higher operational costs due to inadequate land use planning. • Improper access roads can cause soil erosion, landslides and sedimentation of water channels hence causing waste/ inefficient use of resources.

Agriculture (Food crop)

1. At preparation stage

Water

- Intensive usage of nitrogenous fertiliser can cause water eutrophication which accelerates the growth of algae.
- Water contamination from dumping, run-off or leaching of pesticide residue and microbiological contaminants.
- Water consumption in competition with community and industrial water requirements and could cause local/ regional disputes in periods of water shortage.
- Salinisation and water logging from poor irrigation can result in the reduction of yield of salt-sensitive crops since the salts prevent plant roots from making use of water in the soil.

Land access, land-use, land-use change and acquisition

- Land conversion of forests or other native habitats can contribute to climate change, loss of natural resources, and acute habitat degradation and biodiversity loss through conversion of HCV areas and forest fragmentation.
- Land clearing / removal of unwanted organic and inorganic materials from the previous planting cycle can leave topsoil exposed to the natural elements, which can cause soil erosion and degradation of soil health.
- Regular movement of heavy machinery across crop-growing areas can lead to soil compaction, which also inhibits the spread of roots.
- Inadequate restoration of soil nutrients following intensive crop growth can lead to loss of organic matter.

2. At growth stage

Water

- Unsustainable water use in irrigated systems can cause over-withdrawal from aquifers and surface water, impacting farm economics and the livelihoods of surrounding communities.
- Improper irrigation activities (excessive use or insufficient recharge) can cause damage to the water cycle balance which in turn, can lead to (a) insufficient water resources to support the living organisms in the field; or (b) oversaturation of water that inhibits or terminates organic life (e.g., flood, water-logged land).
- Excessive agrochemical application during the growth stage introduces excessive supply of organic matter or nutrients into the field. This can cause run-off/ leaching into the local water channels and water bodies that in turn, can cause eutrophication. Contaminants in water bodies can also affect downstream users of the same water source.
- Upkeep and maintenance (washing) of farm machinery, vehicles and equipment can introduce contaminants (e.g., dirt, fluids, diesel) into the water channels and water bodies.

Land access, land-use, land-use change and acquisition

- The addition of chemical fertilisers such as nitrogen can affect the soil pH and can turn the soils to become too acidic or too alkaline, which affects nutrient availability and overall planting conditions.
- Soil compaction reduces water infiltration and leads to run-off of nutrients in flood events.
- Soil health can be negatively impacted through the unsustainable application of harmful and potentially toxic agrochemicals.
- Agrochemicals application is meant to encourage crop growth or kill/ inhibit the growth of unwanted living organisms (e.g., pests, weeds). However, improper application can cause poisoning of living organisms and natural resources, beyond its intended use. This could have adverse effects on the larger food chain and ecosystem.
- Improper irrigation activities (excessive use or insufficient recharge) can cause damage to the water cycle

balance which in turn, can lead to (a) insufficient water resources to support the living organisms in the field; or (b) oversaturation of water that inhibits or terminates organic life (e.g., flood, water-logged land).
- An improper match of field and tree selection would cause an inefficient use of resources to generate the same unit of output.

3. At collection stage

Water
- Cleaning activities involve the removal of unwanted organic material (crop residue) from the crops using machinery, equipment and/or water. Improper disposal of the wastewater introduces contaminants to the water channels and water bodies.

Land access, land-use, land-use change and acquisition
- The removal of soil due to harvesting using heavy machines may expose soil and lead to soil erosion.

Forestry

1. At preparation stage

Water
- Excessive dependency on water usage especially in irrigation and handling of seedling production and tree growing.

Land access, land-use, land-use change and acquisition
- Soil erosion can occur from forest clearing or poor logging and road-building practices, leading to incidents of major regional and national flooding and water contamination. Forest provides a wide variety of productive and environmental services, so the land use change affects the environmental services provided by the forest depending on the nature of the change such as soil erosion.
- Location selection will determine whether the field conditions are feasible for growth activities of silviculture. An improper match of field and tree selection would cause an inefficient use of resources to generate the same unit of output.
- Land clearing/ removal of unwanted organic (e.g., ground cover plants, natural vegetation, old planting material) and inorganic materials (e.g., rocks, debris from previous planting cycle). Over-clearing of organic material on the field can leave the topsoil exposed to natural elements, which can cause soil erosion and degradation of soil health. Soil health and quality have a direct link to production yields and crop quality.
- Improper land use planning can also result in unnecessary removal of trees, shrubs and ground cover, which exposes the land to natural elements.
- Access roads allow for efficient movement of farm personnel and vehicles (e.g., trucks, motorbikes, tractors, other specialty vehicles) with minimum disruption to the soil surface. Improper access roads can cause soil erosion, landslides and sedimentation of water channels.

2. At growth stage

Water
- Growing trees or seedlings with a high concentration of fertiliser results in leaching, which affects the quantity and quality of water discharges.

	Land access, land-use, land-use change and acquisition • Weeding will control the growth and spread of weeds in the forest stand either through mechanical (e.g., pulling, digging, ploughing, mowing) or chemical (e.g., herbicide, weedicide) methods. Improper mechanical weeding causes damage to the soil surface, or in worse cases, soil erosion and land degradation. • Irrigation affects the flow of water into (through rainfall or irrigation) and out of the field (drainage). Overwatering through natural or irrigation systems causes an imbalance to the sources of water (surface and ground). Overutilisation of sources of water affects the recharging of groundwater and could lead to permanent changes to the soil health. • Agrochemical application introduces foreign substances into the forest stand (e.g., fertilisers, weedicide, herbicide). However, improper application of agrochemicals leads to an imbalance in the chemical properties of the soil (e.g., pH, cation exchange capacity, salinity). • Upkeep and maintenance involve the regular upkeep of natural and man-made farm infrastructure (e.g., roads, bridges, waterways), machinery and equipment. Improper upkeep and maintenance can result in land damage from malfunctioning infrastructure (e.g., collapsed roads/bridges/waterways). 3. At harvesting stage Water • Contamination of waterways and riparian areas affect surrounding environment and users of the water body. Land access, land-use, land-use change and acquisition • Felling damage such as destruction of saplings, long-lasting soil compaction from harvesting equipment, number and frequency of machine cycles. • The removal of soil from logging may expose bedrock, preventing forest regeneration and depleting the capital of site nutrients. • Soil erosion (leading to flooding) and degradation (leading to loss of tree cover, skid trails). • Short rotation of logging will not allow enough time for the nutrient capital to recover by natural inputs, such as by precipitation, nitrogen fixation, and weathering of minerals.
4.2 Risk management (Efficient Use of Resources)	
a)	The measures which can be undertaken by the Client to mitigate the risks identified in 4.1(a), may include but not limited to: - **Palm Oil** Water • Assess irrigation practice to reduce excessive water extraction/ wastage. • Responsible sourcing of raw materials • Improve water management plan (e.g., rain water harvesting system). • Improve riparian vegetation and riparian zone management. Land access, land-use, land-use change and acquisition • Effective commitment to conservation/ reforestation in existing estates including restoration of peatland ecosystem, and trees replanting exercise. • Funding towards biodiversity conservation activities.

	Agriculture (Food crop)
	<u>Water</u>
	• Evaluate water supply and water efficiency measures (e.g., recycling, re-use, run-off reduction, storage) to reduce impacts on surrounding resources and community supplies.
	• Install/ improve irrigation monitoring, collection, and water treatment facilities.
	
	<u>Land access, land-use, land-use change and acquisition</u>
	• Soil Management Plan is developed and implemented with a focus on:
	  ○ Soil productivity, including retention of soil biomass levels, soil structure, salinity, pH, and carbon sequestration.
	  ○ Crop and geographically appropriate practices such as no-till, only planting on suitable slopes, use of cover crops, crop rotation, tree hedges, contour planting, elimination of in-field burning. etc.
	  ○ Adequate protection of riparian areas.
	• Product is produced/ harvested and traded in compliance with all applicable local, national, and ratified international laws and regulations.
	• Producer holds legal rights to conduct activities on the area of land.
	
	Forestry
	<u>Water</u>
	• Establish buffer zones around water bodies/ riparian areas to protect them from being affected by timber harvesting activities.
	• Evidence of closed-loop water treatment system
	
	<u>Land access, land-use, land-use change and acquisition</u>
	• Conduct HCV assessment and ensure that HCV are maintained or enhanced (for natural forests).
	• Ensure the area of land utilized does not contain, and is not suspected of containing, primary forest of HCV areas.
	• Implementation of a No Deforestation, No Peat, and No Exploitation **("NDPE")** policy.
	• Forest Management Plan **("FMP")** or equivalent (as required by national law) within the Forest Management Unit **("FMU")** where the logging takes place (for logging in natural forests).

GP3 – GHG Emissions	
5.1 Risk identification (GHG Emissions)	
a)	The production and consumption of energy contribute significantly to GHG emissions, primarily through the burning of fossil fuels such as coal, oil, and natural gas. For a comprehensive assessment on whether the Client's core activities produce GHG emissions, please apply the below tools: • Exploring Natural Capital Opportunities, Risks and Exposure Tool **("ENCORE")**. *Please note that when using the tools (a) above, please select the 'Impacts' (alludes to the ways in which a Client's activities impact ecosystem services and natural capital) option as opposed to the 'Dependencies' option (used for GP5.1 & GP5.2).* **For the implementation of CCPT classification and 2024 CCPT reporting requirement for SMEs, FIs must prioritise the identified 6 high carbon emitting sectors, namely agriculture, construction, manufacturing, energy, transport & waste management.*

General guidance on GHG emission in agriculture and forestry industries based on its value chain/ life cycle.

Palm Oil

- Excessive GHG emissions through deforestation, agriculture waste/ burning, draining and degrading peat release vast amounts of GHGs (especially methane) and are particularly difficult to put out.
- Land degradation and poor productivity, particularly cultivation of peatlands.
- Land clearance through open burning and forest fires [Act 127: Environmental Quality Act (Prescribed Activities) (Open Burning) Order 2005].
- Lower productivity or product loss due to increased weather risks (e.g., climate change-induced drought).
- Inefficient use of energy throughout the supply chain.

Agriculture (Food crop)

1. At preparation stage
   - Release of GHG emissions such as nitrous oxide (N_2O) from fertiliser applications, and carbon dioxide **(**CO_2) from land clearance and tillage practices.
   - Utilisation of fossil-fuel based farm machinery, vehicles and equipment for the preparation stage generates carbon dioxide (CO_2).
   - Agrochemical application (e.g., lime and urea) during field preparation generates carbon dioxide (CO_2).
   - Decomposition of organic material at landfills after field preparation (e.g., felled trees, unwanted ground cover and old planting material) generates methane (CH_4).
   - Burning of crop residue/ unwanted organic material during field preparation generates methane (CH_4) and nitrous oxide (N_2O).
   - Air conditioning and refrigeration systems in buildings (e.g., workers accommodations, storage facilities) that are part of the farm could leak hydrofluorocarbons **("HFCs").**

2. At growth stage
   - Release of carbon dioxide (CO_2) from soil management and fossil fuel inputs (e.g., tractors).
   - Fertiliser application generates carbon dioxide (CO_2).

3. At collection stage
   - Crops such as paddy production can generate GHG emissions particularly through decomposition of rice straw and husks (through anaerobic decomposition or the practice of in-field burning).
   - Utilisation of fossil-fuel based farm machinery, vehicles and equipment for the collection stage generates carbon dioxide (CO_2).
   - Decomposition of crop residue at landfills post-harvest generates methane (CH_4).
   - Burning of crop residue/ unwanted organic material post-harvest generates methane (CH_4) and nitrous oxide (N_2O).
   - Faulty air conditioning and refrigeration systems for post-harvest storage facilities could leak hydrofluorocarbons (HFCs).

Forestry

1. At preparation stage and growth stage
   - Forest loss and degradation represents up to 20% of global carbon dioxide (CO_2) emissions caused by human activity.

2. At harvesting stage:
   - Carbon emissions and loss of carbon sequestration as a result of lost carbon sinks from forest harvest.

	**For the implementation of CCPT classification and 2024 CCPT reporting requirement for SMEs, FIs must prioritise the identified 6 high carbon emitting sectors, namely agriculture, construction, manufacturing, energy, transport & waste management.*
5.2 Risk management (GHG Emissions)	
a)	The measures which can be undertaken by the Client to reduce GHG emissions or as part of its decarbonisation strategy in mitigating the identified impact of GHG emissions in 5.1(a), may include but not limited to: - **Palm Oil** • Install solar panels on rooftops and land assets. • Adopt low-emission technologies (e.g., electric tractor and machinery powered by clean energy sources). • Install methane (CH_4) capture or avoidance facilities for palm oil mills. • Proximity between the mills and plantation – to minimise emission/ pollution from transportation. • Recycles wastage and converts it into biomass energy. • Use of hybrid vehicles for maintenance work and transportation of palm fruits/ produce. • Restoring, maintaining, conserving, and strengthening of natural land-based carbon stock and sinks (for LULUCF only): - o Avoidance/ suspension of deforestation. o Afforestation and reforestation. o Restoration or rehabilitation of forests, croplands, peatlands, grasslands and wetlands. o Sustainable forest and agricultural management. o Forest and peatland conservation. **Agriculture (Food crop)** • Efforts are made to reduce fossil fuel emissions and increase GHG sequestration. Techniques can include: - o Soil carbon management. o Restoration of native vegetation. o Eliminating in-field burning practices. o Improving in-mill co-generation technology. o Improving the sucrose recovery rate. o Decreasing in-field fuel and agrochemical use. **Forestry** • Strongly discourages forest plantation conversion from HCS areas. • No conversion of natural forest or HCV areas to plantations or to non-forest land use, nor transform plantations on sites directly converted from natural forest to non-forest land use, except when the conversion: - o affects a very limited portion of the area of the management unit; o will produce clear, substantial, additional, secure long-term conservation and social benefits in the management unit; and o does not damage or threaten HCV, nor any sites or resources necessary to maintain or enhance those HCV. • Measure to (a) conserve/ protect; and (b) assess, prevent, and mitigate negative impacts of management activities on, amongst others, ecosystem function of the forest area, including carbon sequestration and storage as well as a monitoring plan. • Gross carbon stock loss resulting from recent logging.

Due Diligence Questions: GP4 – Remedial Measures	
No	**Guidance Notes**
Plans undertaken for remediation of significant harm to the environment	
b)	In assessing whether the Client has clearly defined remedial measures and realistic timeline for completion to address the harm identified in GP3, FIs may enquire the following questions (non-exhaustive): - • Any time-bound targets set and specific steps to achieve the planned remedial measures. • The suitability of the remedial measures with the Client's business activities and strategy. • Sufficient resources (e.g., cash flow, expertise, data, technology) to execute the planned remedial measures in accordance with the timeline.
c)	In assessing whether the Client has proper tracking mechanism on the effectiveness of the planned remedial measures, the Client needs to provide timely progress updates on its milestones for achieving the targets set and to report any deviations during the execution of the remedial measures.

The following are the primary and relevant acts and regulations for the Agriculture and Forestry Sectors (non-exhaustive): -

Sector	Relevant Act and Regulations
Palm Oil	• Act 127: Environmental Quality Act • Act 149: Pesticide Act 1974 • Act 226: National Parks Act 1980 • Act 313: National Forestry Act • Act 385: Land Conservation Act 1960 • Act 418: Waters Act 1960 • Act 486: Land Acquisition Act 1960 • Act 514: Occupational Safety and Health Act 1994 • Act 582: Malaysian Palm Oil Board Act 1998 • Act 716: Wildlife Conservation Act 2010 • Act 655 : Suruhanjaya Perkhidmatan Air Negara (SPAN) 2006 – Water Services Industry Act 2006 • Act 149 : Pesticides Act 1974 and Regulations, Rules and Order • Act 354 : Drainage Work Act 1954 • Act 386 : Irrigation Areas Act 1959 • National Land Code (Act 56 of 1900) and Regulations (LAND) • Occupational, Safety and Health Act 1994 Sarawak • Natural Resources and Environment Ordinance 1993 • Natural Resources and Environment (Prescribe Activities) Order 1994 • Wildlife Protection Ordinance 1998 • Wildlife Protection Rules 1998 • Wildlife Protection (Edible Bird's Nests) Rules 1998 • National Parks and Nature Reserve Ordinance 1998 • Water Ordinance 1998 • Sarawak Biodiversity Centre Ordinance 1997 • Fire Danger Rating System Order 2004 • Forest Ordinance Sabah • Environment Protection Enactment 2002 • Environment Protection (Prescribed Activities) Order 2005 • Environment Protection (Prescribed Activities) (Environmental Impact Assessment) Order 2005 • EIA Guideline on Oil Palm Plantation Development • EIA Guideline for Construction on Hillslope • EIA Guideline for River Sand and Stone Mining
Agriculture	General • Environmental Quality Act, 1974 and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order, 2015 • National Land Code 1965

Sector	Relevant Act and Regulations
	Department of Agriculture • Control of Paddy and Rice Act 1994 (Act 522) • Plant Quarantine Act 1976 (Act 167) • New Plant Variety Protection 2004 (Act 634) • Pesticides Act 1974 (Act 149)
Forestry	Forest Department of Peninsular Malaysia • National Forestry Act 1984 • Wood Based Industry (Powers of the State Legislature) Act 1984 • Akta 105 - Malaysian Timber Industry Board (Incorporation) Act 1973