

Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Golden Agri-Resources (GAR) is one of the largest palm oil plantation companies in the world. Our plantations are located in Indonesia and we manage around 500,000 hectares of palm oil plantations (including smallholder farmers). It has integrated operations focusing on the production of palm-based edible oils and fats and biodiesel. GAR is focused on sustainable palm oil production and its primary activities range from cultivating and harvesting oil palm trees, processing fresh fruit bunches (“FFB”) into crude palm oil (“CPO”) and palm kernel (“PK”), to refining CPO into industrial and consumer products such as cooking oil, margarine and shortening and biodiesel as well as trading palm products throughout the world.

GAR is focused on sustainable palm oil production by adopting the best industry practices and standards, managing the environment responsibly and empowering the communities where we operate while delivering shareholder value. Our sustainability strategy is based on implementing best practices holistically in all dimensions of sustainability (the environment, community, market place and work place); benchmarking our practices against the Roundtable on Sustainable Palm Oil (“RSPO”) Principles and Criteria and the core principles of the United Nations Global Compact (“UNGC”); and engaging stakeholders proactively.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2020	December 31, 2020	Yes	1 year

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Indonesia

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Other, please specify

Financial and operational

C-AC0.6/C-FB0.6/C-PF0.6

(C-AC0.6/C-FB0.6/C-PF0.6) Are emissions from agricultural/forestry, processing/manufacturing, distribution activities or emissions from the consumption of your products – whether in your direct operations or in other parts of your value chain – relevant to your current CDP climate change disclosure?

	Relevance
Agriculture/Forestry	Direct operations only [Processing/manufacturing/Distribution only]
Processing/Manufacturing	Direct operations only [Processing/manufacturing/Distribution only]
Distribution	Direct operations only [Processing/manufacturing/Distribution only]
Consumption	Direct operations only [Processing/manufacturing/Distribution only]

C-AC0.7/C-FB0.7/C-PF0.7

(C-AC0.7/C-FB0.7/C-PF0.7) Which agricultural commodity(ies) that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodity

Palm Oil

% of revenue dependent on this agricultural commodity

More than 80%

Produced or sourced

Both

Please explain

Our plantations are located in Indonesia and we manage over 500,000 hectares of palm oil plantations (including smallholder farmers). We are a leading seed-to-shelf agribusiness—from growing oil palms with farmers to producing food for the present and future.

We are positioning GAR to be the best, fully-integrated, global agribusiness and consumer product company. To achieve this vision, we are enhancing competitiveness, driving positive change and exploring well research opportunities especially in the areas of innovation, technology and sustainability.

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Director on board	The Board and Senior Management are fully involved in and supports GAR's sustainability efforts and commitments under the GSEP and have stated this in the Board of Directors' Statement. A Sustainability Committee (SC) which is chaired by the Corporate Strategy and Business Development Director, oversees all matters related to responsible palm oil including GHG emissions matters. The SC comprises the senior leadership team from the upstream, downstream, and corporate business units, as well as the Head of the Sustainability and Strategic Stakeholder Engagement Department and other staff members from the department. It reports directly to the Chairman and Directors of GAR, and the Board, and meets regularly to oversee the development and implementation of the GSEP and the monitoring of performance across all our business operations.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action	To ensure the appropriate level of oversight and guidance, we have

	Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	established a Sustainability Committee comprising the senior leadership team across the upstream, downstream and corporate centres which meets regularly to oversee the development and implementation of GAR's sustainability strategy. The Committee reports to the Chairman and CEO and the Board, and is a key part of GAR's efforts to embed sustainability in its everyday operations.
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C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Sustainability Committee (SC) reports to the Directors and Chairman of the Board. The SC comprises the senior leadership team from the upstream, downstream and corporate business units as well as the head of the Sustainability Department and other staff members from the Department.

The SC meets regularly to oversee the development and implementation of the GAR Social and Environmental Policy (GSEP) and the monitoring of performance across all our business operations. Aside from these meetings, urgent and developing issues are escalated to relevant SC members for their input and decisions.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Other, please specify Manager	Monetary reward	Emissions reduction project Efficiency project Environmental criteria included in purchases Supply chain engagement	GAR is committed to report and reduce GHG emissions and improve energy efficiency, as outlined in our sustainability policy, the GAR Social and Environmental Policy (GSEP). Our monetary reward is embedded in our Key Performance Indicators which will impact salary increment and yearly bonus/incentives.
Other, please specify Employees on GHG reduction programme	Monetary reward	Emissions reduction project Efficiency project Environmental criteria included in purchases Supply chain engagement	GAR is committed to report and reduce GHG emissions and improve energy efficiency, as outlined in our sustainability policy, the GAR Social and Environmental Policy (GSEP). Our monetary reward is embedded in our Key Performance Indicators which will impact salary increment and yearly bonus/incentives.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

No

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	8	
Long-term	8	20	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Our organisation defines substantive impact as an impact that has a meaningful or important effect to our business, which affects a large proportion of our business units, creates further impacts on those business units, and potentially becomes a material concern for our stakeholders. These impacts occur due to the forest-related risks such as extreme weather events, forest fires, declining ecosystem services, changes to national legislation, changes to international law and bilateral agreements, changes in land tenure regulations, conflicts of land ownership and occupancy rights, negative media coverage, local community opposition, as well as uncertainty about product origin and legality.

Those risks create substantive impacts on our business which are:

- a. Reduction or disruption in production capacity (in tonnes): production capacity is calculated as the sum of fresh fruit bunch output and palm product output.
- b. Increased operational cost (in US Dollar): operational cost consists of selling expenses, general and administrative expenses. Selling expenses comprise of export tax and levy, transportation and delivery, export administration, salaries, wages, and employees' benefits, as well as advertising and promotions. General and administrative expenses comprise of salaries, wages and employees' benefits, rent, taxes and licenses, depreciation and amortisation, repairs and maintenance, travelling, and professional fees.
- c. Disruption in product supply (in million MT)
- d. Reduced demand for products and services (in million MT)
- e. Disruption to sales (in USD): Our sales mostly comprise Crude Palm Oil (CPO) and Palm Kernel (PK) including their derivative products, such as cooking oil, margarine, shortening and biodiesel.
- f. Brand damage

C2.2g

(C2.2g) Why does your organization not have a process in place for identifying, assessing, and responding to climate-related risks and opportunities, and do you plan to introduce such a process in the future?

	Primary reason	Please explain
Row 1	We are planning to introduce a climate-related risk management process in the next two years	GAR is in the process of evaluating climate change risks and opportunities. Meanwhile the company continues to focus on GHG reduction processes such as methane capture. We are developing high-yielding seeds which are also adaptive to extreme weather events caused by climate change and we also continues to work

		with smallholders to boost their resilience in the face of climate change.
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C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Excessive rainfall or extensive period of dry weather will lead to a decrease in the overall yield. Excessive rainfall generally leads to poor pollination of palms and reduces the effectiveness of fertilisers, while drought results in less fruit bunches and oil extraction rate.

Extreme weather phenomenon can also potentially disrupt logistics, causing delays and even damage to our products and assets. Examples of such extreme weather phenomenon is seen periodically during severe El Nino years which brings severe draughts and can also lead to more forest fires and pollutant haze. The last severe El Nino in 2015 caused our production across Indonesia to decline by between 10-15%.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Extreme weather phenomenon like a severe El Nino (causing extreme drought and fires) can lead to a potential reduction/disruption in production. It has the potential to impact our plantation operations, our logistical network as well as our external supply of raw materials to our downstream refineries such as crude palm oil from third-party suppliers who would be experiencing similar problems.

Cost of response to risk

12,320,000

Description of response and explanation of cost calculation

We have implemented various measures to reduce the impact of weather conditions. Historically, CPO prices typically increase when supply is adversely affected by weather conditions, thereby reducing the impact of the decrease in yield.

We also manage risk by educating and preparing our operational staff to deal with climate related incidents, including droughts. This is achieved through crisis management preparation and having in place protocols and procedures to maintain our capability to handle such emergencies. In parallel, our research arm (SMARTRI) plays an essential role in sustaining high productivity and research into producing more climate change- resilient seed stock.

We have also implemented various measures at our plantations to reduce the impact of weather conditions on our plantations, including the construction of drainage systems and roads and the establishment of certain planting patterns. We are also exploring ways to optimise water use in our plantations through the use of advanced technology including AI.

Furthermore, we have developed a fire prevention community programme or Desa Makmur Peduli Api (DMPA). In 2020, we focused on strengthening our fire prevention and mitigation procedures amongst the villages taking part in DMPA. This involved a four-pronged approach, such as Prevention, Preparedness, Early warning systems, and quick response. We also launched an education programme for schoolchildren to educate them about the hazards of forest fires.

The cost indicated above are related to R&D budget and the budget for the DMPA programme. The rest of our response is considered part of operational costs and not calculated separately.

Comment

We are developing crops resilient to the effects of climate change (e.g. extreme weather events such as drought, flooding) and building community resilience, particularly in areas vulnerable to climate change. These are now a top priority in our business. Our annual R&D budget is around USD 12 million - part of which is used for R&D into more resilient crops and climate change adaptation including use of precision agriculture and new technology such as AI. Other costs to mitigate and adapt to climate change are considered part of overall costs. In addition, the amount that we spend on the community collaboration fire-free programmes per year is around USD320,000.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Negative perceptions about palm oil and its links to deforestation can affect market access/demand and possibly lead to changes in international legislation or regulations. Import tariffs and taxes and other import restrictions imposed by importing countries will affect the demand for CPO and its derivative products, and can encourage substitution by other vegetable oils. If importing countries ban imports of CPO from Indonesia, tax competing substitute products, such as soybean oil, at a lesser tax rate, the competitiveness of imported CPO and derivative products can be adversely affected, which can affect the demand for and the price of our products. This impact is currently more likely to affect demand from developed markets.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact is variable and dependent on how much demand is affected and in which markets.

Cost of response to risk

0

Description of response and explanation of cost calculation

We continue to engage with key stakeholders such as customers, consumers, government agencies and NGOs to present factual and accurate representation of sustainable palm oil. We adhere to the GAR Social and Environmental Policy (GSEP) which includes our climate-related commitments on no deforestation, no development of peat, no burning as well as a commitment to reduce GHG emissions. We report on our progress annually through our Sustainability Report, website and GAR Sustainability Dashboard. We also commission external parties to assess our implementation of the GSEP on the ground and to recommend ways to improve.

Comment

Management of this risk is considered part of our overall operational costs and we do not calculate it separately.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market

Other, please specify

Suppliers' awareness to sustainable practices

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Our supply chain especially our critical palm supply chain is required to comply with our sustainability commitments in the GAR Social and Environmental Policy including climate-related commitments on no deforestation, no burning, no development on peat and reduction of GHG emissions. However many of our suppliers (such as mills and their suppliers) in Indonesia are still at the initial stages of adopting sustainable practices due to lack of awareness, capacity and resources. GAR has recently embarked on a programme to help transform our supply chain into one that is more sustainable and responsible.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The impact is variable depending on the nature and magnitude of stakeholder concern or negative feedback.

Cost of response to risk

0

Description of response and explanation of cost calculation

We are assessing and engaging intensively with our suppliers to ensure that they are compliant with the GSEP and we are on track to achieve full traceability to the plantation for our entire palm supply chain by end 2020. Our engagement efforts include site visits, special training, sharing of best practices and a dedicated supplier support team to advise our suppliers on sustainability issues. We visit high-risk suppliers and collaborate with them on time-bound action plans if needed and monitor their progress. While engagement is our preferred option, we have dropped some 7% of our suppliers since 2015 due to non-compliance with our policies. We also have a transparent publicly accessible grievance handling mechanism and a publicly available grievance list which tracks all grievances raised against our suppliers including climate-related grievances

and shows all time-bound actions taken to resolve the grievance. This can be accessed on our website.

We also engage closely and regularly with our key stakeholders including banks, financial institutions and major customers and maintain open and transparent communications with them on any matters of concern.

Comment

Management of this risk is considered part of our overall operational cost and we do not calculate it separately.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of recycling

Primary potential financial impact

Other, please specify

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company-specific description

GAR recycles and reuses 100% of its crude palm oil production waste. Both solid and liquid waste are recycle/reused as fuel or fertiliser in our plantation and mill operations. This helps to reduce energy and fertiliser costs. In 2020, 1,402,806 tonnes of fibre and 645,290 tonnes of shell had been used as fuel for mill boilers. Approximately 2,356,714 tonnes of Empty Fruit Bunch and 7,175,325 tonnes of POME is reused as organic fertiliser. 100% of POME is applied in the field.

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The impact is cost savings at our plantations and mills.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

We continue to maintain 100% recycling of solid and liquid waste including empty fruit bunches, palm oil mill effluent as fuel and fertiliser. 100% of POME is applied in the field after traditional anaerobic and aerobic treatment to render the chemical and physical characteristics compliant with national regulations. A specific application permit has been obtained for each location, with close monitoring of environmental impact as requested by the authorities.

To treat POME, we mix it with shredded empty fruit bunches to produce compost, which is used as organic fertiliser to 50 metres from riparian areas in some of our estates. This contributes to a reduction of chemical fertiliser consumption, which is the second largest GHG emissions source after POME.

This is considered part of our overall operational cost.

Comment

This is considered part of our overall operational cost.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Other, please specify

Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon

Company-specific description

While we work on an overall GHG reduction strategy, we are also working on the implementation of methane capture facilities. These facilities can reduce emissions on-site at our mills in Central Kalimantan, Jambi, and Riau. We have a total of seven methane capture facilities in our units. These facilities utilise biogas for energy to generate electricity for the operations in our mills, and we plan to expand on these activities through working on new and improved facilities. We are also currently working on implementing GHG reduction measures, such as CO-composting, Energy Management System, etc. The facilities capture methane gas which is then used as an alternative energy source, generating electricity for our palm oil mills. These facilities can reduce between 40 – 55 % of operational emissions on site.

GAR's emission reduction through 7 methane capture facilities in 2020 is 388,210 tCO₂e.

(Methodology: CDM AMS-III.H. version 19, GHG measured: CH₄)

GAR's emission reduction through 3 composting facilities in 2020 is 155,623 tCO₂e.

(Methodology: CDM AMS-III.F. version 12, GHG measured: CO₂, CH₄, N₂O.)

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The impact is cost savings at our plantations and mills.

Cost to realize opportunity

2,000,000

Strategy to realize opportunity and explanation of cost calculation

We are committed to reducing the Greenhouse Gas (GHG) emissions from our operations. We recognise that emissions resulting from land use change and cultivation is one of the most significant impacts for any agribusiness. Another significant source of GHG emissions comes from Palm Oil Mill Effluent (POME), the wastewater from processing fresh fruit bunches (FFB), which emits methane if left untreated. POME treatment is one of our main GHG emissions reduction activities. We also carry out methane capture at some of our mills. GAR plans to expand on these activities through working on new and improved facilities on its units.

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO₂, CH₄, N₂O. Our gross direct emissions in 2020 is 2,182,501 tCO₂e, and our biogenic emissions is 2,411,070 tCO₂e. Direct GHG emission calculation started from 2018 and it will be calculated and audited biennially.

Our methane capture facilities have been operational for several years. Thus the current costs of running the plants are considered operational costs. With an assumption the cost of a methane capture facility to capture and utilize the biogas from POME is around USD 2 – 3.5 million, the total capital cost will be around USD 60 – 105 million. Plus operational costs for maintenance and plant upkeep until the end of system lifetime.

Comment

Our methane capture facilities have been operational for several years. Thus the current costs of running the plants are considered operational costs. With an assumption the cost of a methane capture facility to capture and utilize the biogas from POME is around USD 2 – 3.5 million, the total capital cost will be around USD 60 – 105 million. Plus operational costs for maintenance and plant upkeep until the end of system lifetime.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

The European Union's Renewable Energy Directive (RED-2 and Delegated Act) mandates that at least 20% of its total energy used within European Union are from renewable sources. One of the certification schemes that demonstrate compliance with the EU RED requirement is the International Sustainability and Carbon Certification (ISCC) and GAR produces ISCC certified palm oil for use as biodiesel. The Indonesian government has a biodiesel mandate for its domestic and industrial sectors, as diesel fuel is mixed with a percentage of biodiesel (B20 programme). The government is also expected to continue implementing the biodiesel programme with a larger mix of biodiesel (B30). This could present a further opportunity for the palm oil industry. GAR received volume allocation of around 717 thousand kilo litres from the Indonesian government in 2021 for the implementation of the B30 programme. We are in the process of expanding our biodiesel capacity by 1,500 tonnes per day.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

469,958,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The figure refers to revenue from biodiesel products in the reporting year.

Cost to realize opportunity

528,000,000

Strategy to realize opportunity and explanation of cost calculation

GAR has invested in the construction of 2 biodiesel plants in Indonesia to enter the domestic biodiesel market. In 2020, GAR produced 625,000 MT of biodiesel. GAR is

managing the traceability and sustainability of the supply chain to ensure appropriate feedstock in biofuels and ensuring compliance and maintenance of our ISCC certification. All biomass intended for biofuels in destinations like Europe are ISCC certified, ensuring that our products meet the highest responsible palm oil standards in international markets. Our palm oil refineries are RSPO SCC and ISCC-certified and are accredited with ISO 9001. In 2020, raw materials were sourced from 378 third-party mills and 47 GAR-owned mills in Indonesia.

In 2020, production costs at the 2 plants at 100% utilization were 528 million USD.

Comment

In 2020, GAR biodiesel plants continued to fully utilize their total capacity of 600 thousand tonnes, fulfilling the B30 biodiesel mandate in Indonesia.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

No

C3.5

(C3.5) Why have climate-related risks and opportunities not influenced your strategy and/or financial planning?

GAR is currently conducting an evaluation related to climate change-related efforts. Meanwhile, our R&D has carried out various projects related to climate change such as developing more robust seed stock and researching the impacts of high CO₂ conditions on oil palms. The company also has eight methane capture facilities to reduce 40-55% GHG emissions.

From this evaluation process, GAR will determine policies and plans for low-carbon transition plan and energy related to climate change.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

No target

C4.1c

(C4.1c) Explain why you did not have an emissions target, and forecast how your emissions will change over the next five years.

	Primary reason	Five-year forecast	Please explain
Row 1	<p>Other, please specify</p> <p>Our target is based on calculations of certified emissions per tonne of products. We strive to produce sustainable CPO that has lower GHG intensity compared to year before.</p>	<p>Prior to the Scope 1 calculation, we conducted carbon footprint assessment in 2016 to identify emission source in our operational activities. Thus, we can measure our significant emission source.</p> <p>We began calculating and verifying our emissions intensity from our oil palm estates (nucleus only) and mills in Indonesia by 2018.</p> <p>Direct scope 1 emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO₂, CH₄, N₂O. The emissions intensity for CPO in 2020 is 0.99 tCO₂e/tonne CPO produced. GAR produced 2,381,464 tonnes of CPO in 2020 . (This data is not yet verified by third party).</p> <p>The emissions intensity calculation for Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Scope 1 (direct) emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. The type of GHG calculated includes: CO₂, CH₄, N₂O.</p>	<p>There is currently little business incentive to increase our investment in GHG emission reduction. The European Union's Renewable Energy Directive (RED-2 and Delegated Act) for example is aimed at phasing out CPO products. This represents a disincentive to invest further in GHG emissions reduction and targets.</p>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	10	543,833
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Fugitive emissions reductions

Other, please specify

Methane Capture

Estimated annual CO2e savings (metric tonnes CO2e)

388,210

Scope(s)

Scope 1

Voluntary/Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

4-10 years

Estimated lifetime of the initiative

21-30 years

Comment

GAR had carried out a baseline study of our Scope 1 GHG emissions including measurements of carbon dioxide, methane and nitrous oxide in our mills and plantations, and are in the midst of designing an emission reduction strategy.

We recognise that emissions resulting from land use change and cultivation is naturally one of the most significant impacts for any agribusiness. Another significant source of GHG emissions comes from Palm Oil Mill Effluent (POME), the wastewater from processing fresh fruit bunches (FFB) which emits methane if left untreated. POME treatment therefore remains one of our main GHG emissions reduction activities. We also carry out methane capture at some of our mills. GAR continued to reduce GHG emissions in our operations through our facilities to capture methane gas at a number of mills.

We have 7 methane capture facilities. for mills located in in Central Kalimantan, Jambi and Riau. The total emission reduction through methane capture in 2020 is calculated with the methodology of CDM AMS-III.H. version 19. The measured GHG is CH₄. All mills have low emission intensity and with the exception of one facility in Belian, are all ISCC-certified. The captured methane gas is then used as an alternative energy source, generating electricity for our palm oil mills. These facilities can reduce between 40-55% of operational emissions on site. However, all these efforts can be done continuously if the company has markets that recognised low GHG.

Initiative category & Initiative type

Other, please specify

Other, please specify

Waste Utilisation

Estimated annual CO₂e savings (metric tonnes CO₂e)

155,623

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

We calculate the emission reduction from 3 composting facilities. The emission reduction through composting 2020 with the methodology of CDM AMS-III.F. version 12. The GHG measured are CO₂, CH₄, and N₂O.

Initiative category & Initiative type

Other, please specify

Other, please specify

Biomass

Estimated annual CO₂e savings (metric tonnes CO₂e)

0

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

Under our Zero Waste Policy we aim to reuse, recover and recycle. Since 2015, we have achieved 100 percent recycling of waste from the CPO production process in our

upstream operations.

The waste includes solid and liquid waste. Solid waste consists of empty fruit bunches (EFB) of oil palm, fibre and shells. Liquid waste or POME is generated from the processing of FFB to CPO. We use both types of waste as organic fertiliser and fuel.

In 2020, 1,402,806 tonnes of fibre and 645,290 tonnes of shell had been used as fuel for mill boilers. Approximately 2,356,714 tonnes of Empty Fruit Bunch and 7,175,325 tonnes of POME is reused as organic fertiliser. 100% of POME is applied.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	GAR produces CPO as source for biofuel production in Europe market, which needs to fulfil EU-RED (Renewable Energy Directives) requirements of minimum GHG emission savings.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

We produce ISCC certified Crude Palm Oil as source for biofuel production in European market, which needs to fulfil EU-RED (Renewable Energy Directives) requirements of minimum GHG emission savings.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

ISCC 205 GHG Emission

% revenue from low carbon product(s) in the reporting year

Comment

Our palm and laurics downstream business performed notably well during the current year. Sales volume of the downstream segment continued to grow as we expanded destination sales and increased the proportion of value added products, including biodiesel. As demanded by the market, we marketed Certified Crude Sustainable Palm Oil (CSPO) which is certificated under RSPO and ISCC. The total produced of certified CSPO is 56.38% of the total amount of produced CPO. Given the total revenue is 6,43 billion USD, the percentage of revenue from CSPO is 10.57% in 2019.

Level of aggregation

Product

Description of product/Group of products

Biodiesel plants, oleo-chemical, fatty acid and glycerine

We have 2 biodiesel plants in Indonesia with a total capacity of 600,000 tonnes per annum.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

ISCC Schemes low carbon products

% revenue from low carbon product(s) in the reporting year

3.6

Comment

We operated almost five million tonnes per annum refineries in Indonesia with average utilisation rate of 94 percent during the year. Our 1.76 million tonnes per annum kernel crushing plants and 600 thousand tonnes biodiesel plants also operated at their full capacity. Under ISCC schemes, we have low carbon products below 300 Kg CO₂e/ton products. GAR has been able to meet the various requirements of customers by offering an extensive portfolio of refined products in terms of specifications, quality and sustainability certifications.

We also plan to expand the capacity of our biodiesel facility in Kalimantan in order to support the government's biodiesel programme. We will further leverage our established global destination markets in over 70 countries to extract value across the supply chain.

Our downstream business experienced a more challenging operating environment during FY2020, when it was directly impacted by the COVID-19 pandemic in the first

half of the year when many countries entered lockdown periods, leading to abrupt reduction in sales volume and sudden fall in CPO prices. For the full year, downstream achieved a satisfactory EBITDA margin of 3.6%. This performance included contributions from our biodiesel operations in Indonesia.

The palm, laurics and others segment refers to all processing and merchandising of palm and oil seed based products, comprising of bulk, customised and branded products, biodiesel, oleo-chemicals and other vegetable oils, as well as production and distribution of other consumer products in China and Indonesia. Revenue from this segment increased by ten percent to approximately US\$7.1 billion due to higher CPO prices, which was partly offset by lower sales volume.

EBITDA from this segment achieved at US\$255 million, with lower EBITDA margin of 3.6% mainly attributable to lower allocated net fair value gain on financial assets in accordance with IFRS 9. This performance included contributions from our biodiesel operations in Indonesia, sunflower-based business in India and our newly established sugar merchandising division that is complementing our core palm product business.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2014

Base year end

December 31, 2014

Base year emissions (metric tons CO₂e)

2,065,518

Comment

Total target is for upstream activities only (Plantation and Mill). Baseline emission is calculated from POME emission, fuel consumption and chemical use. Base year of 2014 is based on verified calculation by ISCC auditor to 29 Mills, 79 Estates, 6 plasma.

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

We do not measure Scope 2 emissions

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

We do not measure Scope 2 emissions

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

ISO 14064-1

Other, please specify

ISCC 205 Calculation Method

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The calculation method is based on the requirements of the Renewable Energy Directive 2009/28/EC amended through Directive (EU) 2015/1513 (RED) and Fuel Quality Directive 2009/30/EC amended through Directive (EU) 2015/1513 (FQD). Direct GHG emission calculation started from 2018 and it will be calculated and audited biannually. Prior Scope 1 calculation, we conducted carbon footprint assessment in 2016 to identify emission source in our operational activities. Thus, we can measure our significant emission source.

Scope 1 GHG emissions are calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct Scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes CO₂, CH₄, N₂O.

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

2,182,501

Start date

January 1, 2020

End date

December 31, 2020

Comment

Direct GHG emission calculation started from 2018 and it will be calculated and audited biannually. Prior Scope 1 calculation, we conducted carbon footprint assessment in 2016 to identify emission source in our operational activities. Thus, we can measure our significant emission source. 2020 data covers 128 oil palm estates (nucleus only) and 47 mills in Indonesia. 2020 data is pending third party verification. 2018 and 2019 data are verified by a 3rd party.

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO₂, CH₄, N₂O. The emissions intensity for CPO in 2020 is 0.99 tCO₂e/tonne CPO produced. GAR produced CPO in 2020 is 2,381,464 tonnes.

Past year 1

Gross global Scope 1 emissions (metric tons CO₂e)

2,094,250

Start date

January 1, 2019

End date

December 31, 2019

Comment

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from

stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO₂, CH₄, N₂O. 2019 data covers 128 oil palm estates (nucleus only) and 46 mills in Indonesia. 2019 data is verified by PT Lloyd's Register Indonesia.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are not reporting a Scope 2, location-based figure

Scope 2, market-based

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based and location-based figure.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Start date

January 1, 2020

End date

December 31, 2020

Comment

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report Scope 2 emissions, market-based and location-based figure in 2020 reporting year.

Past year 1

Start date

January 1, 2019

End date

December 31, 2019

Comment

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report Scope 2 emissions, market-based and location-based figure in 2020 reporting year.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Capital goods

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Upstream transportation and distribution

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Waste generated in operations

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Business travel

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Employee commuting

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Upstream leased assets

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Downstream transportation and distribution

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Processing of sold products

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Use of sold products

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

End of life treatment of sold products

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Downstream leased assets

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Franchises

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Investments

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Other (upstream)

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

Other (downstream)

Evaluation status

Not evaluated

Please explain

We have no operations where we are able to access purchased goods and services factors and are unable to report Scope 3 emissions.

C-AC6.8/C-FB6.8/C-PF6.8

(C-AC6.8/C-FB6.8/C-PF6.8) Is biogenic carbon pertaining to your direct operations relevant to your current CDP climate change disclosure?

Yes

C-AC6.8a/C-FB6.8a/C-PF6.8a

(C-AC6.8a/C-FB6.8a/C-PF6.8a) Account for biogenic carbon data pertaining to your direct operations and identify any exclusions.

CO2 emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO2)

2,411,070

Methodology

Default emissions factors

Please explain

Biogenic emissions come from burning of biomass and biodiesel and biogas consumption. Biogenic emissions come from burning of biomass and biodiesel and biogas consumption. The number for reporting year has decreased from 2019. The calculation includes: CO2, CH4, N2O.

Under our Zero Waste Policy we aim to reuse, recover and recycle. Since 2015, we have achieved 100 percent recycling of waste from the CPO production process in our upstream operations. The waste includes solid and liquid waste. Solid waste consists of empty fruit bunches (EFB) of oil palm, fibre and shells. Liquid waste or POME is generated from the processing of FFB to CPO. We use both types of waste as organic fertiliser and fuel.

In 2020, 1,402,806 tonnes of fibre and 645,290 tonnes of shell had been used as fuel for mill boilers. Approximately, 2,356,714 tonnes of Empty Fruit Bunches and 7,175,325 tonnes of POME (100%) was reused as organic fertiliser. 100% of our POME is applied in the field (50 metres from riparian areas) after traditional anaerobic and aerobic treatment to render the chemical and physical characteristics compliant with national regulations. A specific application permit has been obtained for each location, with close monitoring of environmental impact as requested by the authorities.

CO2 emissions from biofuel combustion (other)

Emissions (metric tons CO2)

0

Methodology

Other, please specify
Not evaluated

Please explain

We have no operations where we are able to access other CO2 emissions from biofuel combustion factors and are unable to report other biogenic emissions other than mentioned above.

C-AC6.9/C-FB6.9/C-PF6.9

(C-AC6.9/C-FB6.9/C-PF6.9) Do you collect or calculate greenhouse gas emissions for each commodity reported as significant to your business in C-AC0.7/FB0.7/PF0.7?

Agricultural commodities

Palm Oil

Do you collect or calculate GHG emissions for this commodity?

No

Please explain

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO2, CH4, N2O. The emissions intensity for CPO in 2020 is 0.99 tCO2e/tonne CPO produced. GAR produced CPO in 2020 is 2,381,464 tonnes.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.99

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

2,182,501

Metric denominator

metric ton of product

Metric denominator: Unit total

2,381,464

Scope 2 figure used

% change from previous year

8.79

Direction of change

Increased

Reason for change

We produced more CPO compared to previous year. In 2020 we produced 2,381,464 MT CPO, while in 2019 GAR produced 2,306,000 tonnes. This change is also due to replanting activities in our plantations during the reporting year.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

No

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Indonesia D ¹	2,182,501

D¹Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from stationary combustion,

mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO₂, CH₄, N₂O. 2019 data covers 128 oil palm estates (nucleus only) and 46 mills in Indonesia. Data is pending third party verification by PT Lloyd's Register Indonesia.

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO ₂ e)
Upstream (Plantations and mills)	2,182,501

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO ₂ e)
Scope 1 GHG emissions are calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct Scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes CO ₂ , CH ₄ , N ₂ O.	2,182,501

C-AC7.4/C-FB7.4/C-PF7.4

(C-AC7.4/C-FB7.4/C-PF7.4) Do you include emissions pertaining to your business activity(ies) in your direct operations as part of your global gross Scope 1 figure?

Yes

C-AC7.4b/C-FB7.4b/C-PF7.4b

(C-AC7.4b/C-FB7.4b/C-PF7.4b) Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.

Activity

Processing/Manufacturing

Emissions (metric tons CO2e)

2,182,501

Methodology

Default emissions factor

Please explain

Direct GHG emission calculation started from 2018 and it will be calculated and audited biannually. Prior Scope

1 calculation, we conducted carbon footprint assessment in 2016 to identify emission source in our operational

activities. Thus, we can measure our significant emission source. 2020 data covers 128 oil palm estates (nucleus only) and 47 mills in Indonesia. 2020 data is pending third party verification. 2018 and 2019 data are verified by 3rd party

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard, using an operational control approach. Direct scope 1 emission sources include emission from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. Calculation includes: CO2, CH4, N2O. The emissions intensity for CPO in 2020 is 0.99 tCO2e/tonne CPO produced. GAR produced CPO in 2020 is 2,381,464 tonnes.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
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C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities	44,300	Decreased	2.11	<p>In 2019, the reduction from 8 methane capture and 3 composting facilities was 588,133 tCO2e.</p> <p>In 2020, one of our methane capture was offline/not operational. GAR's emissions reduction through 7 methane capture facilities in 2020 is 388,210 tCO2e. (Methodology: CDM AMS-III.H. version 19, GHG measured: CH4) GAR's emission reduction through 3 composting facilities in 2020 is 155,623 tCO2e. (Methodology: CDM AMS-III.F. version 12, GHG measured: CO2, CH4, N2O.) Total sinking from methane capture and composting facilities in 2020: 543,833 tCO2e.</p>
Divestment				
Acquisitions				
Mergers				
Change in output	88,251	Increased	4.21	<p>Scope 1 of 2020 GHG emissions is slightly higher than 2019. This is probably linked to replanting activities. Additionally, 2020 data has not yet been verified by 3rd party. Once verification is complete, the figure may be lower.</p>

Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

Don't know

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	No
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No

Generation of electricity, heat, steam, or cooling	No
--	----

C8.2a

(C8.2a) Report your organization’s energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	249,505.28	1,348,956.11	1,598,461.39
Total energy consumption		249,505.28	1,348,956.11	1,598,461.39

C8.2b

(C8.2b) Select the applications of your organization’s consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Other, please specify
Palm Kernel Meal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

249,505.27

Emission factor

0

Unit

metric tons CO2e per metric ton

Emissions factor source

Not evaluated

Comment

The data is from our downstream operations renewable fuel consumption. The emissions from energy consumption in upstream and downstream operation is not evaluated in 2020.

Fuels (excluding feedstocks)

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

1,267,957.78

Emission factor

755.9

Unit

metric tons CO2e per metric ton

Emissions factor source

https://www.researchgate.net/figure/Carbon-emission-factor-and-standard-coal-coefficient_tbl1_334904209

Comment

The data is from our downstream operations fuel consumption. The emissions from energy consumption in upstream and downstream operation is not evaluated in 2020.

Fuels (excluding feedstocks)

Diesel

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

65,095.83

Emission factor

11.89

Unit

metric tons CO2e per metric ton

Emissions factor source

https://www.researchgate.net/figure/Fuel-emission-factors-used-in-GHG-a-tool_tbl2_256686252

Comment

The data is from our downstream operations fuel consumption. The emission from energy consumption in upstream and downstream operation is not evaluated in 2020.

Fuels (excluding feedstocks)

Natural Gas

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

15,902.78

Emission factor

448.3

Unit

metric tons CO2e per metric ton

Emissions factor source

https://www.researchgate.net/figure/Carbon-emission-factor-and-standard-coal-coefficient_tbl1_334904209

Comment

The data is from our downstream operations fuel consumption. The emission from energy consumption in upstream and downstream operation is not evaluated in 2020.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	No emissions data provided
Scope 3	No emissions data provided

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Biennial process

Status in the current reporting year

Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance

Third party verification/assurance underway

Attach the statement

 LLOYD-AssuranceStatement2019.pdf

 LLOYD-AssuranceStatement2018.pdf

 2020 - GAR Sustainability Report.pdf

Page/ section reference

Page 45 of GAR Sustainability Report 2020 - Data is available but pending third party verification.

Relevant standard

Other, please specify

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard,

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, we are waiting for more mature verification standards and/or processes

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Other, please specify

Educate and share our sustainability policy, the GAR Social and Environmental Policy (GSEP) which contains commitments on GHG reduction with all critical suppliers

% of suppliers by number

100

% total procurement spend (direct and indirect)

86

% of supplier-related Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Our palm supply chain in Indonesia is considered our critical supply chain as it supplies the raw materials for our downstream refineries and kernel crushing plants. A substantial portion of our procurement spend (over 80 percent) is spent on procurement of palm raw materials. The bulk of our procurement comprises crude palm oil (CPO) and palm kernel (PK) for our downstream business in Indonesia.

In 2020, these raw materials were sourced third-party estates, thousands of individual farmers (plasma and independent), as well as brokers and agents who buy from farmers. Based on the high purchasing volume, and the potential environmental and social risks associated with the purchase of CPO, PK and FFB, these are considered GAR's critical suppliers. One of our main commitments under the GSEP is to bring our supply chain along on our journey towards responsible palm oil.

For further information regarding GSEP, please refer here:

[https://goldenagri.com.sg/wp-](https://goldenagri.com.sg/wp-content/uploads/2016/09/GAR_Social_and_Environmental_Policy-2.pdf)

[content/uploads/2016/09/GAR_Social_and_Environmental_Policy-2.pdf](https://goldenagri.com.sg/wp-content/uploads/2016/09/GAR_Social_and_Environmental_Policy-2.pdf)

Impact of engagement, including measures of success

Our engagement activities help us to minimise supply chain risks because it allows us to deepen knowledge, awareness, trust and engagement with our suppliers while assisting them in improving their responsible practices. The success of our engagement can be measured from the transformation of our stakeholders' sustainability practices within their business management and operations. GAR will roll out thematic surveys geared towards issues in which suppliers are most challenged. Thematic surveys will assist GAR to understand better how its interventions are supporting suppliers to integrate sustainability into their business management and improve their practices in the field.

GAR is still in the midst of compiling information about the impact of supplier support programmes as it is a time-consuming process with GAR having to reach out to over 400 mills and further to the suppliers of those mills. Our current analysis and intelligence gathering indicate that many suppliers are not aware of the importance of climate action such as monitoring and reducing GHG emissions and we will have a huge task to educate and support them to achieve competencies in these areas. It is an effort which will require considerable time.

While efforts are still underway re raising GHG emission reduction awareness, currently we have set aside 78,000 ha as conservation area. We are also working in partnership with local communities on conservation – to date, through Participatory Conservation Planning (PCP), we have engaged with 22 villages to date, covering a total area of over 237,000 hectares. Through this process, we have convinced several communities to conserve around 43,000 hectares of forests. We are engaged in jurisdictional approaches to forest conservation in Siak, Aceh Tamiang, Kapuas Hulu; and supporting conservation commitments of 100,000 ha by our suppliers. This brings the total conservation area that we are supporting directly and indirectly to over 220,000 hectares.

Comment

These engagement and support efforts will ultimately help build a more responsible, resilient supply chain and industry. See more on the GAR Sustainability Dashboard: <https://goldenagri.com.sg/sustainability/sustainability-dashboard/>

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Roundtable on Sustainable Palm Oil

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

RSPO encourages its members to move towards low emissions or to avoid emissions through forest conservation. From our supply chain mapping, we also know that 53 percent of our supplying mills or 64 percent of our procured supply in 2020 is RSPO and/or ISPO certified.

To date, over 260,000 hectares of plantations including smallholder plantations of over 51,000 hectares, 31 mills, nine kernel crushing plants, six refineries, seven bulking stations and one oleochemicals plant have received RSPO certification. GAR plays an active role in the RSPO as GAR's Managing Director of Sustainability and Strategic Stakeholder Engagement is on the RSPO Board of Governors representing the Indonesian Growers Caucus (IGC). He is also Co-Chair of the Assurance Standard Committee of RSPO, and our SVP for Group Corporate Communications, is Co-Chair of the Market Development Standing Committee.

We participate in the RSPO working groups on deforestation; peatland; biodiversity; human rights; jurisdictional working group; and outreach and engagement. We are also involved in the RSPO task forces on HCV; FPIC; independent smallholders; compensation; Supply Chain Certification (SCC), trademark as well as Indonesia National Interpretation and review for the Principles and Criteria (P&C), and the Resolution Task Force. Our SVP for Group Corporate Communications has also been appointed chair of the RSPO's Road to COP26 Taskforce in 2021, with a remit to design and deliver a global outreach and advocacy campaign in support of sustainably produced palm oil.

How have you influenced, or are you attempting to influence their position?

We support the RSPO position and are active in various working groups on conservation. Information regarding GAR's RSPO certification is updated quarterly at GAR Sustainability Dashboard: <https://goldenagri.com.sg/sustainability-dashboard/>

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

We adhere to the RSPO Principles and Criteria and we train our employees on the implications and implementation of the GAR Social and Environmental Policy commitments which include commitments to reduce GHG emissions as well as avoidance of emissions through forest and peatland conservation. Similarly we communicate our commitments to our suppliers and require them to comply with our commitments under our Supplier Code of Conduct.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

 2020 - GAR Sustainability Report.pdf

Page/Section reference

Page 45 / Section "ENVIRONMENTAL MANAGEMENT DATA" / Direct (Scope 1) GHG emissions

Content elements

- Governance
- Risks & opportunities
- Emissions figures
- Other metrics

Comment

GAR is still in the middle of developing reduction strategies and emission targets.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Our GHG data is available on page 59 in GAR Sustainability Report 2020, but the data is pending third party verification by PT Lloyd's Register Indonesia

 2020 - GAR Sustainability Report.pdf

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Managing Director, Sustainability and Strategic Stakeholders Engagement	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 47 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

We have evaluated the GHG emissions intensity by product with emissions intensity following the ISO 14064-1:2006 standard, 0.99 tCO₂e/tonne CPO produced in 2020. The calculation is still in the middle of verification process by a third party.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	7,078,000,000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

No

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

AAK AB

Scope of emissions

Scope 1

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO₂e

0

Uncertainty ($\pm\%$)

0

Major sources of emissions

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 46 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 47 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

We have evaluated the GHG emissions intensity by product, with emissions intensity following the ISO 14064-1:2006 standard, 0.99 tCO₂e/tonne CPO produced in 2020. The calculation is still in the middle of verification process by a third party.

Our palm oil refineries are RSPO SCC and ISCC-certified and are accredited with ISO 9001. In 2020, raw materials were sourced from 378 third-party mills and 47 GAR-owned mills in Indonesia. Fresh fruit bunches (FFB), the feedstock for the mills, are in turn supplied by our own nucleus estates, third-party estates, thousands of individual farmers (plasma and independent), as well as brokers and agents who buy from farmers. Procurement of CPO and PK, and procurement of FFB, accounts for around 74 and 12 percent respectively of our Indonesian subsidiaries' procurement spend. We source around 60% of these materials for our refineries from third-party suppliers. We source around 60% of these materials for our refineries from third-party suppliers. From our supply chain mapping, we also know that 53% of our supplying mills or 64% of our procured supply in 2020 is RSPO and/or ISPO certified.

Requesting member

KAO Corporation

Scope of emissions

Scope 1

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO₂e

0

Uncertainty (±%)

0

Major sources of emissions

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 47 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 47 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

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Requesting member

SABIC

Scope of emissions

Scope 1

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO₂e

0

Uncertainty (±%)

0

Major sources of emissions

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 46 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

In 2020, GAR only evaluated the GHG emissions based on annual operational data from 46 mills and 128 supplying estate, Direct scope 1 emission sources include emissions from stationary combustion, mobile combustion, synthetic fertiliser application, and POME treatment. GAR has not evaluated GHG of the products sold by each respective customers.

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The calculation is still in the middle of verification process by a third party.

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SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

GAR has not evaluated GHG emissions of the products sold to AAK AB, KAO Corporation, and SABIC, due to the lack of requirements/criteria when we sold the products.

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Doing so would require we disclose business sensitive/proprietary information	Not evaluated.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

Currently, GAR only evaluates the GHG emissions based on ISCC requirements: plantation, POME, CPO processed, transportation, and excludes land use change. GAR will develop an evaluation method based on customer requests/needs.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.

68.43

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

Name of good/ service

Crude Palm Oil (CPO)

Description of good/ service

We operate over 500,000 hectares of plantations. In 2020, we produced the majority of palm oil fruit (FFB) on our nucleus estates, with around 70,800 plasma smallholders supplied FFB to GAR, about 19% of our total intake of FFB. The feedstock for the mills or FFB is supplied by our nucleus estates, third-party estates, thousands of individual farmers (plasma and independent), as well as brokers and agents who buy from farmers. We have achieved and maintain 100% Traceability to the Mill since 2015 and 100% Traceability to the Plantation for all GAR-owned mills since 2017. It means we fully know and are tracking all supplies of FFB to our mills. We are able to track these materials closely through internal procedures and controls. While we do not own the plasma estates, they are tightly integrated into our management system and we are therefore able to monitor and track production closely.

The bulk of our procurement comprises crude palm oil (CPO) and palm kernel (PK) for our downstream business in Indonesia. In 2020, we sourced from 378 third-party supplier mills and 47 GAR-owned mills which produced 2,205,224 MT of CPO and 569,637 MT of PK. At the end of 2019, we also achieved 100% Traceability to the Plantation (TTP) for all GAR owned mills. Full TTM and TTP is maintained through improved procurement processes and documentation. Despite COVID-19-related constraints, we achieved 90% full traceability for our entire palm supply chain at the end of 2020. Our traceability information is updated quarterly on the GAR website: <https://www.goldenagri.com.sg/sustainability/responsible-sourcing/>

Type of product

Intermediate

SKU (Stock Keeping Unit)

Metric Tonnes (MT)

Total emissions in kg CO₂e per unit

870.23

±% change from previous figure supplied

39.77

Date of previous figure supplied

July 5, 2020

Explanation of change

In 2019, GAR calculated the emission from 46 mills and 128 palm oil estates. 2020 data has not been verified by 3rd parties and there may be changes in the numbers after the verification process is carried out. Changes can also be attributed to replanting activities during the reporting year.

Methods used to estimate lifecycle emissions

Other, please specify

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard

Name of good/ service

Palm Kernel (PK)

Description of good/ service

We operate over 500,000 hectares of plantations. In 2020, we produced the majority of palm oil fruit (FFB) on our nucleus estates, with around 70,800 plasma smallholders supplied FFB to GAR, about 19% of our total intake of FFB. The feedstock for the mills or FFB is supplied by our nucleus estates, third-party estates, thousands of individual farmers (plasma and independent), as well as brokers and agents who buy from farmers. We have achieved and maintain 100% Traceability to the Mill since 2015 and 100% Traceability to the Plantation for all GAR-owned mills since 2017. It means we fully know and are tracking all supplies of FFB to our mills. We are able to track these

materials closely through internal procedures and controls. While we do not own the plasma estates, they are tightly integrated into our management system and we are therefore able to monitor and track production closely.

The bulk of our procurement comprises crude palm oil (CPO) and palm kernel (PK) for our downstream business in Indonesia. In 2020, we sourced from 378 third-party supplier mills and 47 GAR-owned mills (one mill acquired at the end of 2020), which produced 2,205,224 MT of CPO and 569,637 MT of PK. At the end of 2019, we also achieved 100% Traceability to the Plantation (TTP) for all GAR owned mills. Full TTM and TTP is maintained through improved procurement processes and documentation. In 2019, we forged ahead with our Traceability to the Plantation (TTP) efforts. Despite COVID-19-related constraints, we achieved 90% full traceability for our entire palm supply chain at the end of 2020. Our traceability information is updated quarterly on the GAR website: <https://www.goldenagri.com.sg/sustainability/responsible-sourcing/>

Type of product

Intermediate

SKU (Stock Keeping Unit)

Metric Tonnes (MT)

Total emissions in kg CO₂e per unit

3,237.64

±% change from previous figure supplied

212.46

Date of previous figure supplied

July 5, 2020

Explanation of change

In 2019, GAR calculated the emission from 46 mills and 128 palm oil estates. 2020 data has not been verified by 3rd parties and there may be changes in the numbers after the verification process is carried out. Changes can also be attributed to replanting activities during the reporting year.

Methods used to estimate lifecycle emissions

Other, please specify

Scope 1 GHG emissions calculated following the ISO 14064-1:2006 standard

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

Name of good/ service

Not evaluated

Please select the scope

Other, please specify
Not evaluated

Please select the lifecycle stage

Other, please specify
Not evaluated

Emissions at the lifecycle stage in kg CO2e per unit

0

Is this stage under your ownership or control?

No

Type of data used

Data quality

Not evaluated

If you are verifying/assuring this product emission data, please tell us how

Not evaluated

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
Not evaluated		Not evaluated		0

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
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I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now
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Please confirm below

I have read and accept the applicable Terms