



# Bumitama's TCFD Aligned Strategy

**Bumitama Group's business operations are deeply rooted in plant-based resources, making our approach to climate change a critical aspect of our management strategy.** Given the significant impact of climate change on plant growth and agricultural productivity, we recognise the urgent need to adapt and respond effectively. In 2022, we officially endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), a commitment that has been integrated into our revised Sustainability policy and is now a cornerstone of our operational strategies.

Year 2023 marks a significant stride in our journey, as we have enhanced the alignment of our annual disclosures with the TCFD recommendations. **Our proactive approach involves a thorough analysis of the risks and**

**opportunities brought forth by climate change, coupled with simulations to quantify its financial impacts.** We are committed to transparent and proactive disclosure, ensuring that our stakeholders are well-informed about our climate-related initiatives and progress.

Our strategy is structured into four key sections: Governance, Risk Management, Strategy, and Metrics & Targets. **These sections are in adherence to the TCFD's recommended disclosures, offering a holistic perspective on how Bumitama Group comprehends, evaluates, and addresses the multifaceted risks and opportunities presented by climate change.** Through this structured approach, we aim to demonstrate our steadfast commitment to sustainability and responsible management in the face of global environmental challenges.

## Governance

At Bumitama Group, our overarching objective is to **generate appropriate long-term returns for our investors through sustainable operations and strategic expansion**. We are committed to fostering economic progress in the localities where we operate, while adhering to the highest standards of corporate social responsibility and sustainability. This commitment is not only foundational to our business ethos but also a guiding principle in our strategic and operational decision-making.

**Our Sustainability Policy is at the heart of this commitment.** This policy, driven by the profound impact of climate change on both local and global scales, is designed to catalyse necessary changes that **reduce our environmental footprint, optimise land use efficiency, uphold social justice, and ensure responsible business practices** across all our operations. Universally applicable, it extends to all current and future management units, including mills and estates we own or manage. By forming the baseline standard for our internal operations, it not only guides our daily activities but also sets clear expectations for related third parties. We mandate strict compliance with this policy in all trading relationships, thereby embedding our sustainability ethos throughout our supply chain. This policy underscores our operational ethos, where the governance of climate change mitigation is not just a strategic priority but a fundamental aspect of our business model, ensuring sustainability is interwoven into our operations.

In the governance of these commitments, the Board of Directors, led by the Chairman, plays a pivotal role. **The Board of Directors bears the paramount responsibility for steering our climate change response**, underpinning our commitment to achieving our sustainability targets. This responsibility entails a proactive engagement in acquiring and synthesising information from the Sustainability Steering Committee and seeking insights from

external experts. Regular updates on important sustainability and climate-related issues ensure that these considerations are deeply integrated into our business strategy and financial planning.

To reinforce the Board's effectiveness, all members have completed sustainability training mandated under the enhanced SGX-ST Sustainability Reporting Rules, equipping them with crucial insights for informed governance. The CEO, supported by the Head of Sustainability and various departments, is tasked with the operational management of climate-related issues, as delegated by the Board. **This includes conducting a comprehensive study to assess the Group's climate-related risks and opportunities, further informing our strategic direction.**

Our commitment to environmental stewardship is further evidenced by the ambitious environmental targets we have set, supported by specialised units within our Sustainability department. **These units are instrumental in driving initiatives to combat climate change, demonstrating our unwavering commitment to environmental responsibility and sustainable business practices.**



## Strategy

Bumitama Group recognises the profound impacts of climate change on its agri-business operations. Through our long-term strategic approach with direct control over the potential sources and sinks of emissions, **we strive to drive the shift in our current business models towards those that mitigate the identified risks and introduce new low climate-impact ways of achieving our business goals.**

As part of our comprehensive climate mitigation strategy, Bumitama Group has undertaken a thorough identification and prioritisation of climate-related risks and opportunities at the Group level. This critical evaluation **involved engaging senior managers and Directors across various business segments to assess the materiality of a spectrum of physical and transition risks associated with climate change.**

To quantify materiality, we applied a risk scoring system that considered both the likelihood of each risk materialising and the potential magnitude of its impact on our operating profit. **This methodical approach allowed us to assess the relative importance of each climate-related risk and opportunity.**

The outcomes of this assessment are meticulously detailed in this document provide a clear and concise overview of the climate-related risks and opportunities deemed material to our Group.



**Our climate mitigation strategy will be accomplished through implementation of our Climate mitigation strategy with measurable goals and targets.** The company-wide roadmap consists of two separate and complementing pathways, through:

- Intensification of our Landscape Restoration and Conservation-based programmes
- Production-based Approach, which introduces energy and water efficiency measures, alongside conscious reduction of emissions and waste through introduction of low-carbon technologies.

At Bumitama Group, **our Climate Mitigation Strategy is fundamentally centered around transitioning our business models to effectively mitigate identified climate-related risks while embracing low climate-impact methods.** This strategic shift is underpinned by the establishment of measurable goals and targets, ensuring that our progress is quantifiable and aligned with our sustainability commitments. In the process of adaptation, we strive to ensure our operations remain resilient through development of seeds of oil palm trees with improved resistance to extreme weather patterns, while increasingly introducing alternatives for agro-chemicals and improving our fire and draught prevention and monitoring measures. A key aspect of our approach includes promoting energy-saving initiatives and investing in renewable energy, reflecting our dedication to reducing our carbon footprint. Complementing these efforts, we are steadfast in our commitment to sustainable procurement practices and other environmentally conscious measures, actively contributing to the conservation of our planet. Recognising the broader impact of our operations, we are continuously engaged in developing solutions that support regional and global decarbonisation efforts. Integral to our strategy is our adherence to the TCFD recommendations, which guides our reporting practices. We are committed to maintaining transparency in our disclosures, providing a clear and honest overview of our progress, the challenges we face, and our future strategies in climate mitigation.

This proactive approach ensures that our climate mitigation strategy is not only aligned with our business objectives but also responsive to the dynamic nature of climate risks. It reinforces our commitment to a strategic, informed response to climate change, underpinning our efforts in sustainable agri-business practices.

In alignment with TCFD recommendations, **our strategy focuses on understanding and mitigating both physical and transition risks associated with climate change.** Our approach includes comprehensive climate scenario analyses over short, medium, and long-term horizons, considering the lifespan of our oil palm trees and evolving climate risks. Physical risks, aiming at addressing changes in climate such as extreme weather events through improved agronomic practices and R&D, as well as transition risks, which help the Group prepare for the shift to a low-carbon economy, changes in policy, market preferences, and stakeholder expectations, were considered during the study.

## Risk Management

Our approach to risk management at Bumitama Group is both structured and methodical, involving a meticulous process of identifying and assessing risks, which are then graded based on their impact and likelihood. **This process is complemented by the implementation of the Plan-Do-Check-Act cycle, a strategic approach that ensures effective risk management.** Our initiatives are diverse, aiming to comprehensively manage both physical and transition-related climate risks. We are steadfast in our commitment to continuously identifying and addressing climate-related risks and opportunities, focusing intensely on enhancing business resilience and transitioning from conventional, carbon-intensive operations to more sustainable, low-carbon models. A crucial aspect of this transition is the implementation of alternative energy technologies. These technologies are pivotal not only for powering our operations but also for supporting the communities surrounding our mills with renewable energy solutions.

In alignment with this commitment, the **Group has undertaken a comprehensive analysis of two climate scenarios as a crucial part of our resilience assessment strategy leading up to 2050.** These scenarios include one aligned with the Paris Agreement's goal of remaining well below a 2°C temperature increase and a more severe scenario considering a 4°C increase. Utilising the TCFD's recommended analytical framework, this analysis is instrumental in helping us assess both potential transitional and physical risks. It also aids in identifying opportunities related to resource efficiency, energy sources, and market adaptation, ensuring that our strategy is well-rounded and future-proof.





## Metrics and Targets

**Bumitama Group is taking decisive steps to mitigate climate-related risks by setting ambitious emission reduction targets.** These targets, both near-term and long-term, are designed to significantly reduce emissions from our operations and supply chain. Building upon our existing commitments of No Deforestation, No Peat, No Exploitation (NDPE), we have outlined specific goals:

- 1 Deforestation Control:** We aim to limit community land clearing in company-controlled conservation areas, reducing deforestation risks to below 0.1% of total forested areas annually. This target focuses on ensuring the loss of secondary forest and old shrub land cover areas remains smaller than 0.1% of the total forest areas each year.
- 2 Reforestation Programmes:** By 2030, we plan to increase forest cover in company-controlled conservation areas by 10%. This translates to an increase from 48% to 58% in secondary forest and old shrub land cover areas, based on our 2020 baseline.
- 3 GHG Intensity Reduction:** Our goal is to reduce the greenhouse gas (GHG) intensity (TCO<sub>2</sub>/TCPO) by 30% by 2030, using our 2016 baseline as a reference point.

To achieve these targets, our focus areas include:

- **Active Reforestation and Forest Protection:** Collaborating on reforestation efforts and protecting existing forests.
- **Production Efficiency:** Improving the efficiency of our production processes.
- **Methane Reduction:** Installing methane reduction facilities at all existing mills.
- **Renewable Energy:** Increasing the share of renewable energy sources in our operations.
- **Collaborative Carbon Footprint Reduction:** Working with suppliers and contractors to reduce their carbon footprint.

- **Optimisation of Activities:** Identifying ways to optimise our travel and logistics to reduce emissions.

Furthermore, we are committed to transparently disclosing our emission targets and progress in our annual and sustainability reports. This includes initiatives for resource efficiency and waste reduction, alongside enhanced sustainability in our procurement processes.

## Scenario Analysis

We started by imagining two different future worlds to analyse the impact of climate change on our business. One world has warmed up by 2°C and the other by 4°C since the Industrial Revolution. For each scenario, we looked into what risks and opportunities might come up and how they could significantly affect Bumitama Group's operations. We also endeavoured to estimate the financial side of these impacts. This approach helps us prepare for various possible futures and their potential effects on our business.



## Climate-Related Risks and their Financial Implications

Anticipated climate-related risks are poised to significantly influence our business activities. Under a 2°C warming scenario, we foresee escalated expenses stemming from carbon taxation or the need for acquisition of CO<sub>2</sub> emission allowances. A more severe 4°C warming scenario projects heightened procurement costs due to the increased regularity and intensity of natural calamities. This scenario further anticipates a compromised ability to maintain product supply, leading to potential downturns in sales. This vulnerability is attributed to disruptions such as floods, draughts, fires or infrastructure disruptions, triggered by rising sea levels, extreme weather and other related events.

| Type of Risk       | Risk   | Financial Impacts  | 2°C Scenario   |                      |        | 4°C Scenario   |                      |        | Mitigation  |
|--------------------|--|--|--|----------------------|--------|--|----------------------|--------|---|
| Transitional Risks | Company land bank and sourcing area expansion contributes to deforestation and peat drainage | Increased supplier engagement costs and lost sales from suspended transactions | This scenario outlines the potential financial and reputational risks associated with environmental issues such as deforestation, peat degradation, and the deliberate use of fires in landscapes, which could adversely affect our supply chain. The necessity to intensify engagement with local stakeholders to avert practices that elevate CO <sub>2</sub> levels and accelerate climate change is expected to incur additional costs. The Group risks facing suspensions from major buyers and suffering reputational damage, requiring vigilance and sustainable supply chain management to mitigate these risks. |                      |        | In this scenario of 4°C warming, the increase in operational costs for the Group is confined primarily to its supply chain. Despite adhering to the NDPE sourcing policy, the scenario highlights a lag in progress regarding awareness-building among local stakeholders and the broader society. This indicates that while the Group is making efforts to mitigate environmental impact through responsible sourcing, the lack of widespread awareness and action on environmental issues poses a challenge to achieving broader sustainability goals. |                      |        | The Group will enforce NDPE policy across its supply chain and intensify monitoring and engagement to ensure compliance. This approach will be complemented by educational initiatives aimed at enhancing awareness and adoption of sustainable practices among suppliers, leveraging technology and partnerships to track progress and promote transparency. |
|                    |  |  | Onset  | Duration             | Impact | Onset  | Duration             | Impact |   |
|                    |  |  | 10 years   | Longer than 10 years | Medium | 20 years   | Longer than 10 years | Small  |   |
|                    | New and existing regulations related to GHG emissions,                                       | Increased costs from investing in carbon reduction                             | In this scenario, the Company faces rising operational costs driven by the implementation of stricter environmental regulations  |                      |        | In this context, the Group experiences a lesser impact from carbon tax exposure due to the less stringent implementation   |                      |        | To navigate the challenges, the Company will prioritise early implementation of   |

| Type of Risk   | Risk   | Financial Impacts  | 2°C Scenario   |                      |               | 4°C Scenario   |                      |               | Mitigation   |
|----------------|--|--|--|----------------------|---------------|--|----------------------|---------------|--|
|                | Carbon pricing   | strategies, carbon taxes, and rising energy, transportation, and logistics expenses strain financial resources | aimed at combating climate change. This includes the introduction of carbon taxes, emissions trading systems, and other local and global initiatives. Additionally, there is a significant uptick in capital investment requirements for the Company's assets, focusing on reducing GHG emissions and transitioning to renewable energy sources to comply with these new regulatory standards. |                      |               | of environmental regulations. Consequently, the Company adopts a more measured approach to reducing its GHG emissions footprint, implementing only limited measures aimed at mitigating its environmental impact. This scenario suggests a more gradual adaptation strategy to environmental challenges, with a focus on compliance within a less demanding regulatory framework.  |                      |               | programmes and technologies aimed at reducing GHG emissions. Through proactive adoption of these measures, the Company seeks to not only minimise its carbon footprint but also align with potential future regulations, securing a competitive advantage in industry.   |
|                |  |  | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> |  |
|                |  |  | 10 years   | Longer than 10 years | Medium        | 20 years   | Longer than 10 years | Small         |  |
| Physical Risks | Acute risks – <ul style="list-style-type: none"> <li>● Extreme weather aggravated by effects of El Niño/La Niña</li> <li>● Prolonged droughts, fires and floods</li> <li>● Sea level rise</li> </ul> | Financial impacts of crop productivity losses due to fires and floods  | Increasingly frequent extreme weather events lead to damage and the temporary suspension of certain operations, necessitating the implementation of measures to mitigate their effects. This scenario underscores the urgent need for adaptive strategies to maintain business continuity in the face of climate-induced disruptions.  |                      |               | The escalation in both frequency and intensity of extreme weather events inflicts more significant damage, leading to prolonged operational suspensions. This scenario highlights a substantial increase in the costs associated with implementing countermeasures to mitigate these effects, especially when compared to a 2-degree warming scenario. The heightened severity of these weather events underscores the need for more robust and comprehensive adaptation strategies to safeguard operations and financial stability. |                      |               | The Company will focus on R&D efforts to enhance seed resilience, alongside significant investment in infrastructure improvements such as advanced water management systems, and comprehensive monitoring and mitigation strategies. This approach aims to bolster agricultural productivity and sustainability, ensuring resilience against environmental challenges and climate variability. |
|                |  |  | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> |  |
|                |  |  | 10 years   | Longer than 10 years | Medium        | 20 years   | Longer than 10 years | High          |  |

| Type of Risk | Risk  | Financial Impacts   | 2°C Scenario   |                      |        | 4°C Scenario  |                      |        | Mitigation  |
|--------------|---|---|--|----------------------|--------|---|----------------------|--------|---|
|              | Chronic – <ul style="list-style-type: none"> <li>● Soil fertility</li> <li>● Pest outbreaks</li> <li>● Water contamination/ availability</li> </ul> | Financial risks related to decreased crop productivity, crop loss from pests and diseases, and water encroachment in coastal/ river areas | Climate change adversely impacts productivity and causes damage to parts of the operations that need to be counteracted. This scenario emphasises the critical need for adaptive strategies to address reduced operational efficiency and repair damage, ensuring the resilience and continuity of business activities in the face of evolving climate challenges. |                      |        | Severe climate change results in diminished productivity and extensive damage across a broader scope of operations, leading to soaring costs for implementing countermeasures. This scenario accentuates the heightened financial and operational challenges when compared to the outcomes under a 2-degree warming scenario, calling for more comprehensive and effective adaptation and mitigation strategies to manage the escalated impact. |                      |        | The Company will initiate a R&D programme dedicated to cultivating healthy soil, implementing control and mitigation measures to address soil degradation. Additionally, a comprehensive water management programme will be established to optimise water use and ensure sustainable agricultural practices. This strategy aims to enhance ecosystem health, improve crop yield, and ensure long-term environmental sustainability. |
|              |   |   | Onset  | Duration             | Impact | Onset   | Duration             | Impact |   |
|              |   |   | 10 years   | Longer than 10 years | Medium | 20 years  | Longer than 10 years | High   |   |



# Climate-Related Opportunities

When it comes to the positive side, there are several ways the Group can make a difference in its business by focusing on the climate. Our opportunities lie in **enhancing energy efficiency and utilising renewable energy sources, fostering sustainability-minded purchasing behavior, bolstering our business continuity plans, and promoting the use of organic fertilisers while recycling and reusing production waste.** These initiatives not only advance our environmental objectives but also offer avenues for business growth and social impact.

| Type of Opportunity | Opportunity                | Financial Impacts   | 2°C Scenario   |                      |        | 4°C Scenario  |                      |       |        |  |  |
|---------------------|----------------------------|---|--|----------------------|--------|---|----------------------|-------|--------|--|--|
| Resource Efficiency | Improved energy efficiency | Enhanced energy efficiency at production sites leads to reduced production costs                                  | The Group capitalises on the opportunity to transition to efficient equipment and adopt advanced production management techniques on a large scale. This strategic move is poised to significantly enhance energy efficiency and reduce production costs. This scenario illustrates a proactive approach to operational improvements, leveraging technological advancements to achieve substantial gains in sustainability and cost-efficiency.  |                      |        |   |                      |       |        |  |  |
|                     |                            |   | Onset  |                      |        | Duration  |                      |       | Impact |  |  |
|                     |                            |   | 10 years   | Longer than 10 years | Medium | 20 years  | Longer than 10 years | Small |        |  |  |
| Energy Sources      | Use of renewable energy    | Leveraging sustainable raw materials for increased sales; Access to premium markets, higher customer satisfaction | By transforming all energy sources within operations to renewable energy and collaborating with suppliers to adopt similar measures, the Group aims to significantly reduce CO <sub>2</sub> emissions across Scope 1, 2, and 3. This strategic overhaul not only minimises supply chain emissions but also maximises the reduction of carbon footprint. The transition enables the Group to benefit from energy savings, generate revenue from selling by-products like kernel shells, and gain access to premium markets and pricing due to enhanced sustainability credentials. This |                      |        | This approach utilises some renewable energy sources, coupled with the sale of products designed to reduce CO <sub>2</sub> emissions across Scope 1 and 2, results in limited benefits. These include cost savings from the transition away from conventional energy sources, and marginal increase in sales revenue generation from the sale of by-products, due to the demand for sustainable products. |                      |       |        |  |  |

| Type of Opportunity | Opportunity  | Financial Impacts   | 2°C Scenario  |                      |               | 4°C Scenario  |                      |               |
|---------------------|--|---|---|----------------------|---------------|---|----------------------|---------------|
|                     |  |   | scenario represents a holistic approach to energy management, emphasising the dual benefits of environmental responsibility and economic advantage.   |                      |               |   |                      |               |
|                     |  |   | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> |
|                     |  |   | 10 years  | Longer than 10 years | Medium        | 20 years  | Longer than 10 years | Small         |
| Markets             | Increased sustainability considerate purchasing behavior | Increased sales and premium pricing for products drive revenue growth                                   | The Group's robust sustainability practices, including initiatives focused on biodiversity conservation, community development, and climate mitigation, receive global recognition. This recognition results in co-financing opportunities for the Group's ESG projects, opening doors to new markets, and commanding premium pricing for its products. This scenario highlights the significant value derived from a strong commitment to sustainability, not only in terms of environmental impact but also in terms of financial viability and market competitiveness. |                      |               | Amid efforts to mitigate the impact of climate change, the significance of forest conservation is escalating, accompanied by a growing demand for sustainability-conscious products. Recognising this trend, we acknowledge that supplying certified oil requested by customers not only meets market demand but also fosters stronger relationships with our existing business partners. This scenario underscores the alignment of environmental stewardship with business objectives, albeit in a limited manner compared to a 2 degree scenario |                      |               |
|                     |  |   | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> |
|                     |  |   | 10 years  | Longer than 10 years | Medium        | 20 years  | Longer than 10 years | Small         |
| Resilience          | Improved business continuity plan                        | Improving business continuity planning in response to natural disasters results in higher net sales and | Through the reinforcement of Business Continuity Planning to adapt to climate change impacts, the Group anticipates maintaining production outputs and elevating corporate value. This proactive approach not only safeguards operational continuity but also enhances the Group's resilience in the face of climate-related disruptions, thereby bolstering investor confidence and corporate reputation. This scenario underscores the  |                      |               | In contrast to the outcomes projected under the 2-degree scenario, the Group has only somewhat reduced the decline in its production outputs and sustain its corporate value. This reflects the result of the Group's proactive measures in adapting to climate change impacts, aiding operational resilience, and striving to preserve investor confidence.  |                      |               |

| Type of Opportunity | Opportunity  | Financial Impacts   | 2°C Scenario  |                      |               | 4°C Scenario   |                      |               |
|---------------------|--|---|---|----------------------|---------------|--|----------------------|---------------|
|                     |  | increased share prices  | intrinsic link between climate resilience strategies and long-term corporate sustainability and success.  |                      |               |  |                      |               |
|                     |  |   | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> |
|                     |  |   | 10 years  | Longer than 10 years | Medium        | 20 years   | Longer than 10 years | Small         |
|                     | Promotion of organic fertilisers, recycling and reusing production waste | Transitioning from agrochemical use to regenerative agriculture practices in response to climate change reduces operational costs and enhances sustainability | The Group capitalises on the opportunity to transition away from the use of agrochemicals, opting instead for a high percentage of regenerative agriculture practices within its operations. This strategic shift not only reduces costs but also enhances crop productivity, particularly during prolonged periods of climate extremes. By embracing sustainable farming techniques, the Group improves operational efficiency demonstrates environmental stewardship, positioning itself for long-term resilience and profitability amidst changing climate conditions. |                      |               | In contrast to the projections under the 2-degree scenario, the Group has somewhat reduced the use of agrochemicals in effort to implement regenerative agriculture practices within its operations. This shift lowers costs while enhancing crop productivity, particularly beneficial during prolonged periods of climate extremes. By prioritising sustainable farming methods, the Group demonstrates its commitment to environmental stewardship while simultaneously improving operational efficiency and resilience in the face of changing climate conditions. |                      |               |
|                     |  |   | <b>Onset</b>  | <b>Duration</b>      | <b>Impact</b> | <b>Onset</b>   | <b>Duration</b>      | <b>Impact</b> |
|                     |  |   | 10 years  | Longer than 10 years | Medium        | 20 years   | Longer than 10 years | Small         |